

4.0 Community and Social Analysis

4.1 Right-of-Way

4.1.1 Regulatory Context and Methodology

4.1.1.1 Regulatory Context

Federal and State Law

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970, and its amendments, provides federal requirements regarding the acquisition of right-of-way for any federally funded actions. The Uniform Act is adopted for all public acquisitions in Minnesota by Minnesota Statutes section 117.52. The purpose of this act is to ensure people whose real property is acquired, or who move as a result of projects receiving public funds, will be treated fairly and equitably.

The longevity of any alternative, which is the expected lifespan of infrastructure to be built, is also guided by federal policy. Applicable federal regulations and advisories are found at 23 CFR 710 (Right-of-Way and Real Estate) with reference to 49 CFR 24 Subpart B (Real Property Acquisition) and at 23 CFR 626 (General Pavement Design Considerations). These regulations include guidance regarding cost-effective public investments for highway rights-of-way and infrastructure. The right-of-way acquired for the project will be a permanent solution (see definition below) commensurate with the transportation investment.

Minnesota Statutes (sections 117 and 160) provide the legal authority to acquire right-of-way through direct purchase or condemnation.

Right-of-Way Definitions

There are a number of ways that right-of-way can be established. In an effort to minimize confusion in terminology, the following definitions for methods of establishing right-of-way were considered in this evaluation.

- **Permanent Solution:** The permanent acquisition (greater than 99 years) of property rights for transportation use. Acquisition can be accomplished via a number of means as defined below. If the solution involves an easement, the agreement would require the easement owner to be responsible for any future road/infrastructure relocation. If the solution involves a permit for use within the easement by a third party (e.g., for a trail), the permittee would be responsible for relocating their infrastructure per the terms of the permit and underlying easement.
 - **Fee Acquisition:** Surface and/or mineral ownership is transferred to the buyer
 - **Permanent Easement:** An agreement giving a designated party other than the landowner the right to use the property for a specific purpose in perpetuity
 - **Long-Term Easement:** A time-limited agreement giving a designated party other than the landowner the right to use the property for a specific purpose, for a specific time period as outlined in the agreement (i.e., greater than 99 years)
- **Surface Rights**
 - **Total Acquisition:** The entire property is acquired, excluding mineral rights
 - **Partial Acquisition:** Only a portion of the property is acquired with the remainder of the property staying with the owner
 - **Easement Agreement:** An agreement between the owner and the easement holder that defines the rights granted by the easement. The easement agreement may include terms to address compensation, duration, notice for performing work in the easement area, or other

terms that articulate how the owner and easement holder interact.

■ Mineral Rights

- Mineral rights can be owned separately from rights for the surface of land. In Minnesota law, this is known as a “severance” of surface and mineral rights associated with a property. Severance of mineral rights usually occurs through a sale of land rights which specifically states in the deed of conveyance the specific mineral rights retained by the seller. Once severed, mineral rights become a type of real property that may be sold or inherited.¹

Mineral Rights Ownership in Minnesota

The owner of mineral rights in Minnesota has the right of entry to explore for and mine minerals, with the surface owner compensated for any resulting damages to the surface. If the State of Minnesota owns the mineral rights to any land, state law prohibits the sale of those rights; however, they may be leased at public sale. The Minnesota Department of Transportation (MnDOT) has historically purchased highway right-of-way subject to mineral rights, without purchasing the mineral rights.

Minnesota Statutes section 160.10 provides that unless there is an agreement that the road must be relocated at the road authority’s expense, the owner of the mineral rights is responsible for costs of relocating the road. Roads or highways in areas of valuable minerals, such as the Iron Range, are built using both approaches. The costs of the mineral rights are weighed against the risk of being required to move the road in the future. In the circumstance of this project, the 1960 easement agreement between MnDOT and the owner of the minerals (US Steel Corporation, succeeded by RGGS) states that MnDOT is responsible for the highway relocation. This resulted in MnDOT being able to use the property for over fifty years for the highway but allowed the property owner (RGGS) to terminate the easement agreement at no cost to RGGS. MnDOT is committed to acquiring a permanent solution (greater than 99 years) to address mineral rights that would not require MnDOT to pay to relocate the new highway in the future.

Mining Practices

Minnesota Rules, part 6130.1200, item H requires a mining setback of 100 feet from road right-of-way, except where mine access or haul roads cross the road right-of-way, and 500 feet from any occupied dwelling, public school, church, public institution, county or municipal park, or cemetery unless allowed by the owner. The mine operator (UTAC) typically uses a 300 foot blasting setback from the road right-of-way for safety, which is a standard industry best practice, but can mine as close as 100 feet. These setbacks are not imposed by MnDOT, but they are part of the design and operating considerations as the project alternatives are refined if setbacks are required to protect and preserve the integrity of the roadway infrastructure. For the Build Alternatives, practical design will dictate whether setbacks are needed to avoid impacts from excavation and/or blasting within close proximity to the road base. Setbacks will be a point of negotiation with the mineral owners and their lessees.

4.1.1.2 Methodology

Each alternative has been evaluated to identify the number of parcels that would be partially or totally acquired for right-of-way, within the proposed right-of-way limits, based on general construction limits, as shown in **Figures 4.1-1 through 4.1-3**. These construction limits cover the area needed during construction, including potential stormwater pond locations, which led to the identification of the right-of-way that would need to be acquired. Specific staging areas were not included in the construction limits. If staging areas are needed outside the areas of evaluation, they will be identified for the preferred alternative and evaluated in the Final Environmental Impact Statement (EIS). Parcel data was obtained from St. Louis County for the study area and updated by MnDOT. Additionally, existing parcel access was considered to determine if access changes would be required as a result of road modifications. If so, new access options were identified.

¹ See the Minnesota DNR Fact Sheet “Mineral Rights Ownership in Minnesota,” November 2000, found at: http://www.dnr.state.mn.us/lands_minerals/ownership.html

When determining if a parcel would be a total acquisition, the following factors were considered:

- Would a partial acquisition create an uneconomical parcel or non-compliant parcel (one that no longer meets building codes and/or building setbacks and therefore has a reduced property value)?
- Would a partial acquisition substantially impair the use of the parcel?
- Would a partial acquisition eliminate or severely restrict access to the parcel?
- Would a partial acquisition be a hardship for the landowner?
- Would a total acquisition create an opportunity for right-of-way preservation, access management, or cost savings (by preventing future conflicts)?

The estimated costs of right-of-way acquisition are included in Chapter 9: Cost Analysis.

The process to acquire each parcel will follow federal regulation (49 CFR 24) and Minnesota Statutes (sections 117 and 160). Appraisals will be performed in accordance with the Uniform Standards of Professional Appraisal Practice (USPAP) published by the Appraisal Foundation. Additionally, to identify any mineral resources on any of the alternatives, MnDOT has obtained core samples for mineral analysis by the University of Minnesota's Natural Resources Research Institute (NRRI) minerals lab in Coleraine, MN. NRRI staff is creating quantity models for valuation of mineral resources/rights that may require compensation. This valuation will be completed in 2015 and the results will be reported in the Final EIS. This analysis will estimate value based on the amount and quality (level of oxidation) of ferrous resources present, as well as its accessibility/location. Samples are also being evaluated for indicators of non-ferrous resources and potential for them within the Alternative E1-A and E-2 alignments. Since this data is currently unavailable, general resource estimates were used with risk factors added for cost estimating purposes to allow qualitative comparison of alternatives (see Chapter 9: Cost Analysis). Based on the Monte Carlo risk assessment (see Chapter 9: Cost Analysis) conducted for the cost estimates, the cost ranges provided for each alternative are expected to be representative estimations. The valuation data, when available, will be used to narrow the cost range and provide a basis for negotiation with mineral rights owners. The results of the mineral resource valuation will be used for cost estimating purposes only and will not change results of any other resource evaluation covered in this Draft EIS.

4.1.2 Existing Conditions

This section describes ownership and parcel access for the land in the vicinity of the Draft EIS alternatives. Land and mineral rights in the vicinity of the project alternatives are largely owned by two parties, RGGS (Parcel 17) or the State of Minnesota School Trust (Parcel 18). Mine lands and mineral rights within the permit to mine area, environmental setting boundary, and existing easement agreement area (shown in [Figures 1.0-1 and 4.2-1](#)) are owned by RGGS. UTAC leases the lands within the environmental setting boundary from RGGS. Similarly, a non-ferrous metallic mineral lease has been granted by the State of Minnesota to Vermillion Gold, Inc. on the School Trust land. The location of the School Trust land and other parcels in relation to the Build Alternatives is shown on [Figures 4.1-1 through 4.1-3](#).

4.1.2.1 No Build Alternative (Easement Agreement Area Closed)



MN 135.

The No Build Alternative stays within existing right-of-way of the reroute roadways (MN 37, Co. 7, US 169) and is limited to adding new signage. There are no direct driveway access points along US 53 between 12th and 2nd Avenues or between Cuyuna Drive and MN 135. There is one access to the Mineview in the Sky (an elevated viewing area open to the public) and one to RGGS property within the existing easement agreement area between 2nd Avenue and

MnDOT and RGGS/UTAC boring data indicates that the existing easement agreement area is rich in ferrous resources.

4.1.2.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



This alternative stays within one parcel, as it is confined by the existing US 53 easement agreement area, established in 1960 by an agreement (Appendix A) between MnDOT and United States Steel Corporation (now RGGs). The existing easement agreement provides the legal limitations of the existing easement area depicted in Figure 2.1-4. In May 2010, UTAC and RGGs provided notice to MnDOT regarding the termination of easement rights, and the easement agreement was amended in May 2012 to modify the easement termination date to May 2017.

Two driveway access points are provided to RGGs property on the north and south sides of US 53. These access points serve RGGs land to the south and Mineview in the Sky to the north. The Mineview in the Sky is subject to a license agreement held by RGGs.

As noted above, MnDOT and RGGs/UTAC boring data indicates that the existing easement agreement area is rich in ferrous resources.

4.1.2.3 Alternative M-1



Alternative M-1 is routed through the operating UTAC mine, where surface and mineral rights are owned by RGGs, and UTAC leases the right to mine from RGGs. As the corridor proceeds to the northwest and approaches existing US 53, the adjacent parcels are undeveloped with no structures and do not have direct access to US 53. Alternative M-1 is located largely on RGGs property (see Figures 4.1-1 and 4.1-4).

There are 13 parcel owners (Parcels 2, 3, 4, 12, 17, 18, 19, 23, 207, A35, A38, A42, and A49) adjacent to the M-1 corridor, none of which have direct driveway access to US 53.

Based on MnDOT core samples, the M-1 corridor is higher in ferrous resources (when considering the full width of right-of-way and mining setbacks) than initially estimated during the Scoping process by UTAC and MnDOT.

4.1.2.4 Alternative E-1A



Alternative E-1A departs from existing US 53 north of Cuyuna Drive, routing primarily through lands owned by the State of Minnesota School Trust (Parcel 18) and RGGs (Parcel 17) before returning to existing US 53 near the 2nd Avenue interchange. A variety of property types, including residential, commercial, and industrial, exist in the area surrounding 2nd Avenue.

There are 16 parcel owners (Parcels 10, 11, 12, 14, 15, 16, 17, 18, 19, 23, 24, 25, 28, 29, 30, and 207) adjacent to the E-1A corridor, none of which have direct driveway access to US 53 (see Figures 4.1-2 and 4.1-5). Parcel 16 (2nd Avenue Auto) does have direct access to 2nd Avenue.

MnDOT drilled 28 ferrous exploratory borings within the E-1A alignment area (as of September 18, 2014) in an effort to determine the potential extent of ferrous resources that may be encumbered by this alternative (see Figure 4.1-6). Preliminary results indicate that most of the iron formation is absent and/or highly oxidized within the E-1A alignment from the southern end of the drilling project to the west high wall of the pit. However, preliminary results also indicate high grade iron ore will likely be found between the west high wall and east boundary of the city of Virginia. The Alternative E-1A ferrous ore evaluation will be completed in 2015. MnDOT also drilled six non-ferrous/metallic exploratory borings within the E-1A alignment in an effort to determine the extent of these potential resources (currently under exploration/mining lease) which the Minnesota Department of Natural Resources (DNR)/School Trust identified and suggested could be encumbered by this alternative. Chemical analyses and reporting of non-ferrous/metallic mineral presence on the E-1A alignment will be completed in 2015. Right-of-way/easement costs will be subject to the estimated quantity and quality of ferrous and non-ferrous resources encumbered by this alternative, with costs increasing as the quality and/or quantity increases.

4.1.2.5 Alternative E-2



Alternative E-2 departs from existing US 53 at approximately the MN 135 interchange, routing primarily through lands owned by the State of Minnesota School Trust (Parcel 18) and RGGs (Parcel 17), including lands owned by RGGs that are not currently leased by another entity, before returning to existing US 53 near the 2nd Avenue interchange. The UTAC boundary shown on **Figure 1.0-1** marks the limits of the UTAC lease on lands owned by RGGs. A variety of property types exist in the area surrounding 2nd Avenue, including residential, commercial, and industrial. These properties have access to US 53 via 2nd Avenue.

There are eight parcel owners (Parcels 14, 16, 17, 18, 19, 23, 24, and 207) adjacent to the E-2 corridor, none of which have direct driveway access to US 53 (**Figures 4.1-3 and 4.1-7**). Parcel number 16 (2nd Avenue Auto) does have direct access to 2nd Avenue.

MnDOT drilled 21 ferrous exploratory borings within the E-2 alignment area (as of September 18, 2014) in an effort to determine the potential extent of ferrous resources that may be encumbered by this alternative (see **Figure 4.1-6**). Preliminary results indicate that high grade iron ore will likely be found within most of the E-2 alignment area. Iron formation is absent and/or highly oxidized in a short stretch through the pit (bridge area) as well as in a short stretch adjacent to and north of Landfill Road. Alternative E-2 ferrous ore evaluation will be completed in 2015. MnDOT also drilled four non-ferrous/metallic exploratory borings within the E-2 alignment area in an effort to determine the extent of these potential resources (currently under exploration/mining lease) which the DNR/School Trust identified and suggested could be encumbered by this alternative. Chemical analyses and reporting of non-ferrous/metallic mineral presence on the E-2 alignment area will be completed in 2015. Right-of-way/easement costs will be subject to the estimated quantity and quality of ferrous and non-ferrous resources encumbered by this alternative, with costs increasing as the quality and/or quantity increases.

4.1.3 Environmental Consequences

4.1.3.1 No Build Alternative (Easement Agreement Area Closed)



No new right-of-way acquisition is necessary to implement the No Build Alternative.

Parcels

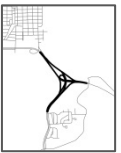
No new right-of-way acquisition is necessary for this alternative. Access to Mineview in the Sky/RGGs from the existing easement agreement area would be eliminated along with the existing US 53 road segment between 2nd Avenue and MN 135.

The segments of existing northbound US 53 between Cuyuna Drive and MN 135 would be retained for access to MN 135. This portion of the existing easement agreement area would be purchased in fee or re-negotiated to preserve the corridor.

Mineral Rights

The No Build Alternative corridor utilizes existing roads to reroute traffic outside the ore formation. The signed route for US 53 (MN 37, Co. 7, and US 169) does not conflict with the Biwabik Iron Formation and is not anticipated to impact any ferrous or non-ferrous resources.

4.1.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



Under the Existing US 53 Alternative, existing roadways are left intact to retain the current operation of US 53.

Parcels

Fee acquisition of the existing easement agreement area (77 acres) from RGGs would be required to allow US 53 to remain within the existing easement agreement area corridor.

Access to the Mineview in the Sky and RGGs parcels would remain unchanged.

Mineral Rights

The land and mineral rights in the existing US 53 alternative area are owned by RGGS. As per the 1960 easement agreement, at this time the State is responsible for costs to relocate the roadway upon notice. If the road is not relocated, the State may be subject to payment of damages to RGGS/UTAC. Fee acquisition of the existing easement agreement area could be extremely costly and presumably need to be acquired by condemnation because RGGS/UTAC would not be a willing seller. The volume of ferrous resources is estimated to be substantial in this alternative, whereas the landowner has not indicated that there are any non-ferrous metallic resources of concern here. Based on two independent methods for estimating resource quantity and value by MnDOT, the cost to acquire the easement agreement area is estimated to be in the \$400-600 million range.

4.1.3.3 Alternative M-1



US 53 Mainline Corridor

This alternative generally cuts through the existing Auburn Pit with the majority of impact to one property owner, RGGS, and the leaseholder, UTAC (see [Figure 4.1-1](#)).

Connection to 2nd Avenue West

The entire four lanes of existing roadway are not necessary to retain this local connection, which will be provided via the new Southern Drive intersection. Current designs for maintaining the local roadway assume use of the northbound lanes of US 53 for the local road. The southbound lane portion of US 53 would be removed, potentially allowing some existing right-of-way to be available for other uses.

Reconfiguration of the existing 2nd Avenue interchange to an at-grade roadway may also result in the acquisition of a small portion of the parcel currently owned by RGGS on the northwest corner of the US 53/2nd Avenue interchange, similar to the No Build Alternative (see [Figure 2.3-2](#)).

Removal of the 2nd Avenue interchange would reduce the right-of-way required for this location by eliminating the need for the loop ramp currently located on the south side of US 53. Some of this right-of-way may have other ancillary uses, such as for the provision of stormwater management ponds or snow storage.

The segment of existing US 53 from the 2nd Avenue interchange to the new Southern Drive intersection would be subject to negotiations with the City of Virginia for a “turnback” of ownership to the City for what would become a local street.

Connection to MN 135

Similar to the No Build Alternative, a portion of the existing easement agreement area containing US 53 is proposed to be retained for Alternative M-1. The eastern portion of the existing easement agreement area segment between MN 135 and Cuyuna Drive ([Figure 4.1-1](#)) would be purchased in fee or renegotiated to preserve the corridor.

Parcels

Portions of 13 parcels, including one total acquisition and a portion of the existing easement agreement area, would be acquired by this alternative, as shown in [Table 4.1-1](#) and [Figure 4.1-4](#). The greatest impact is to Parcel 17 through the mine. Access may be modified to Parcels 2, 17, and 207. No relocations would be required under this alternative.

The proposed right-of-way area shown on [Figure 4.1-1](#) includes areas needed for construction of this alternative, including stormwater management and other mitigation needed. If staging areas are needed outside of the new right-of-way, they will be identified and evaluated in the Final EIS.

[Table 4.1-1](#) summarizes the new right-of-way needed for Alternative M-1.

Table 4.1-1 Summary of Alternative M-1 Right-of-Way Impacts

EIS Document Parcel ID	Parcel Number/ Multiple Parcel Identifier ^A	Land Use Classification	Parcel Size (acres)	Acres Impacted	Access Impacts	Anticipated Parcel Acquisition
Existing US 53 Easement Agreement Area	RGGS	Existing Road Easement	76.7	(13.9) ^B	N/A	Partial
2	090-0137-00030	Commercial	10.4	8.6	Yes	Partial
3	090-0137-00010	Commercial	1.8	0.2	No	Partial
4	City of Virginia	Municipal	21.9	0.4	No	Partial
6 and 7	Virginia Economic Development Authority	Municipal	14.4	0.6	No	Partial
12	State of Minnesota	Tax-Forfeited Real Estate	2.8	0.06	No	Partial
17	RGGS	Industrial	494.2	102.6	Yes	Partial
19	St. Louis County	County	41.8	0.7	No	Partial
23	090-0180-01570	Commercial	31.9	4.8	No	Partial
207	090-0180-01376	Commercial	14.3	14.3	Yes	Total ^C
A38	090-0180-00986	Church Properties	1.0	0.04	No	Partial
A42	090-0140-00010	Residential	0.1	0.02	No	Partial
A49	090-0140-00550	Residential	0.1	0.01	No	Partial
TOTAL				132.3		

^A Source: St. Louis County Parcel ID numbers

^B This indicates the portion of the existing easement agreement area needed under Alternative M-1. It is not included in the sum of acres impacted as it is also covered under the RGGS parcel impacts.

^C Although only a portion of this parcel would be impacted, MnDOT would acquire the full parcel as it would create an opportunity for right-of-way preservation of an undeveloped parcel.

Mineral Rights

Even by crossing the Auburn Pit area identified by the mine operator for a new US 53 route, encumbrance of ferrous resources would occur with Alternative M-1. Recent drilling conducted by MnDOT and a re-evaluation of the Alternative M-1 impacts by MnDOT and UTAC indicate that marketable ferrous resource impacts would be greater than initially identified during Scoping. This would result in substantially higher acquisition costs for right-of-way than were originally anticipated during the Scoping analysis due to the increase in estimated ferrous resources encumbered by the M-1 alignment and mining setbacks from the new road right-of-way, which were identified when the preliminary roadway layout was reviewed with UTAC. It is estimated that a strip through the mine approximately 1,100 feet wide would not be mineable using current right-of-way setback and mining practices (**Figure 4.1-8**). The landowner has not indicated that there are any non-ferrous metallic resources of concern here.

4.1.3.4 Alternative E-1A



This alternative departs from existing US 53 north of Cuyuna Drive and crosses MN 135 before turning to the northwest to cross the Rouchleau Pit, with the majority of the impact to two property owners, RGGS and the State of Minnesota School Trust.

US 53 Mainline Corridor

As Alternative E-1A crosses north of MN 135, it enters School Trust land controlled by the Minnesota DNR (**Figure 4.1-2**). As described in **Table 4.1-2**, the estimated impact area for Alternative E-1A RSS Option is 53.2 acres of right-of-way in the School Trust lands (Parcel 18). This includes approximately 4.6 acres of DNR lands within the Iron Range Off-Highway Vehicle Recreation Area (OHVRA), within the

proposed right-of-way. The Bridge Option would result in no changes to the number of parcels affected and may have a smaller right-of-way area impact. The amount of land that would be acquired overall for highway right-of-way within the OHVRA has been minimized to the extent possible at this stage of design, taking into consideration topographic and geometric constraints. The road alignments have been shifted as far west as feasible while balancing elevation, grades, safety, and minimizing resource impacts. For more discussion of the OHVRA and potential impacts, see Section 4.3.

Connection to 2nd Avenue West

Conversion of the partial interchange to an at-grade intersection would reduce the right-of-way required for this location by eliminating the need for the loop ramp currently located on the south side of US 53. The excess right-of-way may have other ancillary uses, such as for the provision of stormwater management ponding for the new roadway and snow storage.

Connection to MN 135

■ Intersection Option

Conversion of the interchange access at MN 135 to an at-grade intersection would occur under the Intersection Option. Access would be retained with an at-grade, $\frac{3}{4}$ intersection with the westbound MN 135 to southbound US 53 movement being eliminated or provided with a restricted crossing U-turn north of the intersection. As shown in [Figure 4.1-5](#), a small area of new right-of-way (from Parcel 18 – State of Minnesota) would be necessary to create the new intersection.

A portion of the existing easement agreement area containing US 53 is proposed to be retained for Alternative E-1A. The eastern portion of the US 53 easement agreement area between MN 135 and Cuyuna Drive ([Figure 4.1-2](#)) would be purchased in fee or renegotiated to preserve the existing MN 135 exit ramp corridor.

■ Interchange Option

The amount of additional right-of-way needed to replace an at-grade intersection with a compressed diamond interchange at MN 135 is 1.2 acres, of which 0.5 acres is within the OHVRA, resulting in a total OHVRA impact of 5.1 acres for this option as shown in [Figure 4.1-9](#). This additional impact to the OHVRA is caused by changes in roadway elevation and the need to raise the grade in this area for grade separation at the interchange. Similar to the Intersection Option, the MN 135 exit ramp corridor would also need to be acquired for the Interchange Option.

Parcels

There are 18 parcels, in addition to the existing easement agreement area, that could be impacted by this alternative, under either the RSS Option or the Bridge Option, as shown in [Table 4.1-2](#) and [Figure 4.1-5](#). The greatest impact is to Parcels 17 and 18. The location of this impact may vary within the area of evaluation shown in [Figure 2.2-1](#), but the magnitude should remain relatively unchanged. Access may be modified to Parcels 14, 16, 17, 23, and 24.

[Figure 4.1-5](#) shows Parcels 14, 15, 16, 24, 25, and 207 as potential total acquisitions with the Intersection Option. Parcels 16 and 25 have structures and/or a business that would require relocation. The remaining parcels do not require any relocations. With the Interchange Option, the same number of parcels would be impacted and the same parcel access modifications would be required, but there would be two fewer total acquisitions (see [Figure 4.1-9](#)). Parcels 24 and 25 would be impacted but would not be total acquisitions because the elevation of the interchange would be closer to the existing roadway elevation. The Intersection Option would require a greater elevation change (the roadway would need to be excavated down) and would therefore have a larger footprint than the intersection.

Under this alternative, the current access configuration to Mineview in the Sky would no longer be available.

The proposed right-of-way area shown on [Figure 4.1-2](#) includes areas needed for stormwater management.

Table 4.1-2. Summary of Alternative E-1A Intersection Option Right-of-Way Impacts

EIS Document Parcel ID	Parcel Number/ Multiple Parcel Identifier ^A	Land Use Classification	Parcel Size (acres)	Acres Impacted	Access Impacts	Anticipated Parcel Acquisition ^B
Existing US 53 Easement Agreement Area	RGGS	Existing Road Easement	76.7	(8.5) ^C	N/A	Partial
6 and 7	Virginia Economic Development Authority	Municipal	9.4	2.8	No	Partial
8	City of Virginia	Municipal	2.9	0.5	No	Partial
10	090-0180-00775	Commercial	3.2	0.1	No	Partial
11	090-0060-03500	Residential	0.08	0.02	No	Partial
12	State of Minnesota	Tax-Forfeited Real Estate	0.08	0.01	No	Partial
14	090-0180-00846	Commercial	0.6	0.6	Yes	Total
15	090-0180-00848	Commercial	1.0	1.0	No	Total
16	090-0180-00844	Commercial	0.9	0.9	Yes	Total; relocation required
17	RGGS	Industrial	329.7	86.2	Yes	Partial
18	State of Minnesota School Trust	State	179.5	53.2	No	Partial
19	St. Louis County	County	41.8	12.5	No	Partial
23	090-0180-01570	Commercial	31.9	17.9	Yes	Partial
24	090-0180-01575	Commercial	1.2	1.2	Yes	Total (partial under Interchange Option)
25	090-0180-1576	Commercial	1.7	1.7	No	Total; relocation required (partial under Interchange Option; no relocation)
28	090-0180-01572/ 090-0180-01577	Residential	5.7	1.8	No	Partial
29	State of Minnesota	State	10.7	0.6	No	Partial
30	090-0180-01583	Residential	1.4	0.02	No	Partial
207	090-0180-01376	Commercial	14.3	14.3	No	Total ^D
TOTAL				195.4		

^A Source: St. Louis County Parcel ID numbers

^B Interchange Option differences shown in parentheses

^C This indicates the portion of the existing easement agreement area needed under Alternative E-1A. It is not included in the sum of acres impacted as it is also covered under the RGGS parcel impacts.

^D Although only a portion of this parcel would be impacted, MnDOT would acquire the full parcel as it would create an opportunity for right-of-way preservation of an undeveloped parcel.

Mineral Rights

Ferrous resources are present on this alternative, but low ore grades and, to a lesser extent, inaccessibility due existing mining setbacks from the buildings in Virginia greatly diminish their value. Setbacks from the new road right-of-way would not encumber ferrous resources of high quality or quantity (Figure 4.1-10). There are potential impacts to the ability to explore for and mine non-ferrous metallic resources on School Trust lands within the proposed right-of-way for this alternative. MnDOT is in the process of evaluating core samples to better understand the quantity and quality of ferrous and non-

ferrous metallic resources within this alternative. Analyses will be completed in 2015 and available results summarized in the Final EIS for the preferred alternative or as otherwise appropriate to update Draft EIS findings.

There may also be a potential value of a lease held by Vermillion Gold, Inc. on School Trust land. The terms of the lease agreement held by Vermillion Gold, Inc. stipulate that the DNR cannot issue other leases, permits, or licenses that unduly interfere with the exploration of mineral resources on the School Trust land (**Figure 4.1-2**). The edge of the Biwabik Iron Formation begins near Landfill Road and has been mined in the past per recent core samples and DNR records; thus, the eastern edge of this alignment has low potential for ferrous or non-ferrous metallic resources. Easement or acquisition costs for road right-of-way may need to consider necessary mining setbacks from the proposed road.

4.1.3.5 Alternative E-2



This alternative generally follows the existing Landfill Road alignment and crosses over the Rouchleau Pit, with the majority of impact to two property owners, RGGG and the State of Minnesota School Trust.

US 53 Mainline Corridor

As Alternative E-2 crosses north of MN 135, it enters School Trust land controlled by the DNR (**Figure 4.1-3**). As described in **Table 4.1-3**, the estimated impact area for Alternative E-2 is 67.4 acres of right-of-way in the School Trust lands (Parcel 18). This includes approximately 4.3 acres of DNR lands within the OHVRA, shown within the estimated right-of-way limits. However, the amount of land that would be acquired overall for highway right-of-way may be less than shown; the impacts to the OHVRA have been minimized to the extent possible at this stage of design, taking into consideration topographic and geometric constraints. The road alignments have been shifted as far west as feasible while balancing elevation, grades, safety, and minimizing resource impacts. For more discussion of the OHVRA and potential impacts, see Section 4.3.

Connection to 2nd Avenue West

Conversion of the partial interchange to an at-grade intersection would reduce the right-of-way required for this location by eliminating the need for the loop ramp currently located on the south side of US 53. The remaining right-of-way may have other ancillary uses, such as for the provision of stormwater management ponding for the new roadway and snow storage.

Connection to MN 135

■ Intersection Option

Conversion of the interchange access at MN 135 to an at-grade intersection would occur under the Intersection Option. Access would be retained with an at-grade, $\frac{3}{4}$ intersection with the westbound MN 135 to southbound US 53 movement being eliminated or provided with a restricted crossing U-turn north of the intersection. As shown in **Figure 4.1-7**, a small area of new right-of-way (from Parcel 18 – State of Minnesota) would be necessary to create the new intersection.

Similar to the No Build Alternative, a portion of the existing easement agreement area containing US 53 is proposed to be retained for Alternative E-2. The eastern portion of the US 53 existing easement agreement area between MN 135 and Cuyuna Drive (**Figure 4.1-7**) would be purchased in fee or renegotiated to preserve the corridor.

■ Interchange Option

The amount of additional right-of-way needed to replace an at-grade intersection with a compressed diamond interchange is 4.5 acres. It does not increase the acres needed from the OHVRA. This option would impact the same number of parcels and would not result in any additional total acquisitions or parcel access modifications (see **Figure 4.1-11**).

Parcels

The proposed right-of-way area shown on **Figure 4.1-3** includes areas needed for stormwater management.

■ Straight Option

There are eight parcels, in addition to the existing easement agreement area, that could be impacted by the Straight Option, as shown in **Table 4.1-3** and **Figure 4.1-7**. The greatest impact is to Parcels 17 and 18; the location of this impact may vary within the area of evaluation shown in **Figure 2.1-6**, but the magnitude should remain relatively unchanged. Access may be modified to Parcels 14, 16, and 17.

Figure 4.1-7 shows Parcels 14, 16, and 207 as total acquisitions. Parcel 16 has structures and/or a business that would require relocation. The remaining parcels do not require any relocations.

By using a portion of the Landfill Road alignment for Alternative E-2, the current access for Landfill Road from MN 135 would no longer be functional. Access to the Landfill Road would be provided directly from US 53, including a median crossover to allow access to Landfill Road from southbound US 53. Under this alternative, the current access configuration to Mineview in the Sky would no longer be available.

■ Curved Setback Option

The Curved Setback Option would impact one additional parcel compared to the Straight Option (Parcel 30). The impact to this parcel (0.02 acres) would be similar to the impact from Alternative E-1A as shown in **Table 4.1-2**.

Table 4.1-3. Summary of Alternative E-2 Intersection Option Right-of-Way Impacts

EIS Document Parcel ID	Parcel Number/ Multiple Parcel Identifier ^A	Land Use Classification	Parcel Size (acres)	Acres Impacted	Access Impacts	Anticipated Parcel Acquisition
Existing US 53 Easement Agreement Area	RGGS	Existing Road Easement	76.7	(20.2) ^B	N/A	Partial
14	090-0180-00846	Commercial	0.6	0.6	Yes	Total
16	090-0180-00844	Commercial	0.9	0.9	Yes	Total; relocation required
17	RGGS	Industrial	522.1	75.8	Yes	Partial
18	State of Minnesota School Trust	State	229.4	52.1	No	Partial
19	St. Louis County	County	41.8	2.1	No	Partial
23	090-0180-01570	Commercial	31.9	5.5	No	Partial
24	090-0180-01575	Commercial	1.2	0.1	No	Partial
207	090-0180-01376	Commercial	14.3	14.3	No	Total ^C
TOTAL				151.4		

^A Source: St. Louis County Parcel ID numbers

^B This indicates the portion of the existing easement agreement area needed under Alternative E-2. It is not included in the sum of acres impacted as it is also covered under the RGGS parcel impacts.

^C Although only a portion of this parcel would be impacted, MnDOT would acquire the full parcel as it would create an opportunity for right-of-way preservation of an undeveloped parcel.

Mineral Rights

Estimated right-of-way setbacks are shown in **Figure 4.1-21**. There are substantial ferrous resources on the east-west portion of this alternative on RGGS and School Trust lands outside the current permit to mine boundary. There are also potential impacts to the ability to explore for and mine non-ferrous metallic

resources on School Trust lands within the proposed right-of-way for this alternative. MnDOT is in the process of evaluating core samples to better understand the quantity and quality of ferrous and non-ferrous metallic resources within this alternative. Analyses will be completed in 2015 and available results summarized in the Final EIS for the preferred alternative or as otherwise appropriate to update Draft EIS findings.

There may also be a potential value of a lease held by Vermillion Gold, Inc. on School Trust land. The terms of the lease agreement held by Vermillion Gold, Inc. stipulate that the DNR cannot issue other leases, permits, or licenses that unduly interfere with the exploration of mineral resources on the School Trust land ([Figure 4.1-3](#)). The edge of the Biwabik Iron Formation begins near Landfill Road per recent core samples and DNR records; thus, the eastern edge of this alignment has low potential for ferrous or non-ferrous metallic resources. However, costs may need to consider necessary mining setbacks from the proposed road.

The segments of existing northbound US 53 between Cuyuna Drive and MN 135 would be retained for access to MN 135. This portion of the existing easement agreement area south of the existing MN 135 interchange would be renegotiated to permanently preserve the corridor for transportation purposes.

4.1.4 Avoidance, Minimization, and Mitigation Measures

4.1.4.1 Avoidance and Mitigation Measures

Efforts have been made during alternatives development and preliminary engineering of the various alternatives to minimize the amount of new right-of-way needed to the extent possible by following previously disturbed areas (roads, mined lands).

Alternatives M-1, E-1A, and E-2 all use part of the eastern portion of the existing easement agreement area to maintain a connection to MN 135 (Cuyuna Drive to the MN 135 segment). For purposes of this analysis, a permanent solution has been assumed for this common segment. Based on the nature of mine operation at the Midway area of Virginia and the geology of this area (it cannot be mined due to road and building blasting setbacks), MnDOT is committed to a permanent acquisition of right-of-way for this segment.

MnDOT evaluated the potential for acquiring new right-of-way outside the existing easement agreement area for the MN 135 connection, in case the existing easement agreement area cannot be acquired. The Build alternatives (M-1, E-1A, and E-2) require some reconstruction/reconfiguration of the local connection to MN 135 from US 53. Options for this connection were investigated that would avoid requiring continued use of the existing easement agreement area; rather, each would result in acquisition of land outside of the existing easement agreement area as permanent right-of-way. These options are described in the Alternatives Development Report (Kimley-Horn, 2014; provided in [Appendix K](#)) and would not preclude UTAC from mining up to the edge of the existing easement agreement area due to the road alignment and setback shifting east. Per DNR records, the area of US 53 south of MN 135 is east of the Biwabik Iron Formation.

After consideration of several alternate alignments, a shift east of the existing easement agreement area was incorporated into Alternative E-1A and the Alternative E-2 Curved Setback Option, with modifications to minimize relocation and wetland impacts.

Federal Highway Administration (FHWA) guidance emphasizes the protection of the public investment in transportation infrastructure. An important aspect of cost-effectiveness is the longevity of any alternative. MnDOT understands the risk for future relocation for property that cannot be purchased in perpetuity. Therefore, MnDOT is committed to negotiate a permanent solution (greater than 99 years) to protect the public investment and highway infrastructure.

4.2 Economic and Business

4.2.1 Methodology

The scope of the economic analysis has changed since the 2012 Scoping Document was completed. During the Scoping process and as documented in the February 2012 Scoping Document, the scope of the economic and business analysis was anticipated to be qualitative based on the estimated loss of property tax due to right-of-way acquisition, increased travel times including changes in access to businesses, as well as business impacts to mine operations due to air quality requirements. This section still covers two primary areas of economic interest. First, the areawide business and economic impact of increasing travel time to cross the Biwabik Iron Formation, and second, the short and long-term risk to business operations of the UTAC mine that the existing US 53 easement agreement area crosses. However, as alternatives evolved and a western alternative was reconsidered during the 2013 amended Scoping process, it was determined by MnDOT that a more quantitative economic analysis would better define potential impacts to the local communities and businesses. As a result, MnDOT completed the Highway 53 Relocation Economic Impact Study (McComb Group and SEH, 2014) to not only address travel times and business access, but also evaluate more in depth the potential impacts to area businesses, residents, and community services. As such, a qualitative assessment of property tax loss and business access became irrelevant, as the more detailed assessment of business losses captured the intent of the previously defined scope.

The Economic Impact Study compared the Build Alternatives and Existing US 53 Alternative to the W-1A Alternative. The rationale for combining the Build Alternatives M-1, E-1A, and E-2, and Existing US 53 Alternative (“No Build Option1” in the study) is that the economic analyst determined that they all would have essentially the same economic effect as existing conditions (i.e., no substantial change in travel distance or time that would affect local/regional economies). Similarly, the W-1A and No Build (“No Build Option 2” in the study) Alternatives would have similar impacts following the same alignment. However, it should be noted that the No Build Alternative would likely have worse impacts than Alternative W-1A since there would be no roadway improvements to increase existing capacity. However, for purposes of this analysis, it was assumed that Alternative W-1A would adequately represent the magnitude of impacts that would result from the traffic re-routing that would occur with the No Build Alternative based on the study techniques and may therefore be referenced synonymously.

Areawide Economic Impacts

The following evaluation of potential economic and business impacts within the study area is derived from the Highway 53 Relocation Economic Impact Study (McComb Group and SEH, 2014), incorporated herein by reference and available on the project website.²

This assessment relies heavily on the Highway 53 Relocation Economic Impact Study (McComb Group and SEH, 2014). This study evaluated the difference in potential economic and business impacts between the Build Alternatives and the No Build condition of rerouting of US 53 to the west along MN 37 and Co. 7. The Economic Impact Study goes into detailed assessment of travel times, patterns, and travelsheds, as well as commuting costs, effect on business sales, lodging, and area jobs. The areawide economic impacts sections below summarize key parts of the economic study which demonstrates the potential economic impacts to the Quad Cities (Virginia, Eveleth, Mountain Iron, and Gilbert) and other East Range cities³ resulting from the change in distance and travel time between cities. This section also generally covers the expected economic impacts to community/public services. A more detailed discussion of community service impacts is covered in Section 4.7.

² <http://www.dot.state.mn.us/d1/projects/hwy53relocation/TechnicalReports.html>

³ East Range cities, for the purposes of this document, are defined as Eveleth, Gilbert, McKinley, Biwabik, Aurora, and Hoyt Lakes.

Mine Operation Impacts

This discussion, as previously scoped, reflects a qualitative assessment of how each road alignment location would affect access to ferrous resources (considering right-of-way and blasting/mining setbacks), access to mine facilities, and anticipated mine operation risks associated with long term air quality compliance requirements.

Mine operations were considered in areas with a current permit to mine and environmental setting boundary. A permit to mine means legal approval has been given by the commissioner of the DNR to conduct a mining operation. Beyond the permit to mine boundary is the environmental setting boundary, which includes additional areas that may be directly or indirectly affected by mine activity and is the boundary most closely aligned with the area leased by the mine operator (see [Figure 4.2-1](#)). Therefore, the term “permit to mine” is used when describing the area of mine operations, and the term “environmental setting boundary” is used when referring to the broader, legal limits of the UTAC mine. The only permit to mine or environmental setting boundary within the study area is issued to UTAC as the mine operator, and is shown in [Figure 1.0-1](#). To obtain a permit to mine and environmental setting boundary for a new mine operation requires an environmental evaluation by the DNR based on an approved mining plan submitted by the mine operator. The DNR determines the level of evaluation needed for a proposed expansion of an existing mining operation (Minnesota Statutes, section 116D).⁴ Any non-mining activity proposed within the permit to mine area or environmental setting boundary could potentially be in conflict with mining operations and deemed a potential business impact to the mine operator and landowner.

It is known that UTAC has a lease agreement with RGGS in the vicinity of the Built Alternative alignments; it has been assumed for purposes of this document that the lease boundary generally follows the environmental setting boundary.

It should be noted that it is not the purpose of this Draft EIS to determine the air quality impact of mining activities. MnDOT must comply with the legal requirements of the easement regardless of what the landowner's intent is for the vacated easement agreement area. In this case, mining activities were determined to be separate undertakings and not connected actions⁵ for the following reasons:

- The US 53 relocation project and mine activities do not have the same purpose. The US 53 highway relocation is needed to respond to the terms of the easement agreement and continue to provide a facility that meets transportation needs (connectivity, capacity, mobility, safety).
- The mine's future business activities are not part of the undertaking of relocating US 53. The existing easement agreement area is outside of the current permit to mine boundary. Expanding the permit to mine boundary would require separate environmental review by the DNR.

The extent of air quality analysis for this Draft EIS is related only to qualitatively assessing the potential business risk impact the road project would have on the mining business's ability to meet its permit requirements at the new road alignment.

4.2.2 Existing Conditions

US 53 as Local Economic Transportation Link

Mountain Iron and Virginia (the main portion) are located on the north side of the Biwabik Iron Formation/UTAC mine, and the Midway neighborhood of Virginia, Eveleth, and Gilbert are located on the south side of the formation/mine ([Figure 4.2-2](#)). The existing easement agreement area of US 53 provides the primary connection across the formation/mine between these communities; it links Mountain Iron and the main/larger portion of Virginia to Virginia's Midway neighborhood and links Eveleth and Gilbert to Virginia's main business districts. The existing easement agreement area currently carries more traffic (22,850 vehicles per day in 2011) than any other segment of US 53 in the study area. This

⁴ Information on mineland permitting is also available at http://dnr.state.mn.us/lands_minerals/mineland_reclamation/index.html

⁵ Connected actions are defined in Minnesota Rules, part 4410.0200, subpart 9c and 40 CFR Part 1508.25

heavy demand on the existing easement agreement area of highway indicates the importance of this link within the area's transportation network. Beyond the Quad Cities, US 53 is also an important link to West Range cities (defined for the purposes of this document as Hibbing and Chisholm) via US 169 and MN 37 West, and the East Range cities (Hoyt Lakes, Aurora, and Biwabik) via MN 135 and MN 37 East.

Local Businesses

US 53 provides transportation system access to numerous business centers and commercial/retail businesses in Eveleth, the Midway area, and Virginia (via South 2nd Avenue West, South 12th Avenue West, and 13th Street South). According to the City of Virginia's webpage, businesses take advantage of the access provided by the highway. **Figure 4.2-2** shows the location of these business centers and commercial developments, including the Thunderbird Mall (which houses 32 businesses and is located in the southern part of the city), major chain restaurants, national big box retail and grocery stores, and a car dealership. Essentia Health-Virginia is also a major employment center and destination that benefits from access to US 53.

Other business areas in Virginia include downtown (which includes retail stores along a five block stretch of Chestnut Street), the Northgate Plaza in north-central Virginia, and the 8th Street South locations. A number of industrial sites are also dependent on US 53 for deliveries and distribution, including:

- Pearsall Industrial Park: 34 acres, located southwest of the US 53 corridor
- Hoover Industrial Park: 31 acres, located at the western edge of Virginia and accessible from US 53 and US 169
- Progress Park: a 240 acre high-tech business park that is a joint effort of Virginia and Eveleth and part of the Statewide Job Zone; located between Virginia and Eveleth and accessible from US 53

These and other businesses in the Quad Cities depend on US 53 for exposure to potential clients, accessibility, and interconnection to/from respective businesses (reasonable travel times). These and other businesses are important to the Quad Cities for the jobs they provide as well as the tax revenue they generate.

UTAC Mine

The UTAC mine is a specific business that provides a number of economic benefits to the Quad Cities area. It extends south from the existing easement agreement area to Eveleth and several miles to the southwest. Access to the mine is via US 53 south of the existing easement agreement area, near Eveleth. Taconite is shipped from the site via rail. The UTAC mine is not dependent on US 53 for distribution of its products (taconite, ferrous resources); however, it is dependent on US 53 for deliveries, other services, and access for its employees.

According to the Iron Range Resources and Rehabilitation Board (IRRRB) and local Economic Development Authority (EDA), UTAC and other mine-related businesses are major employers in the area and, as a result, are an integral part of the local economy. Mining provides local jobs, requires support from other businesses in the area (fuel, mechanical, geotechnical), and generates taconite production taxes.

The Taconite Production Tax is collected by the state (Minnesota Statutes section 298.24) and is paid by mines in lieu of property taxes based on the amount of taconite produced annually. The objective of the Taconite Production Tax is to focus mining industry tax revenues on Iron Range communities. These funds are distributed to cities and townships, school districts, counties, and government agencies in the Taconite Assistance Area. See **Appendix D** for more information about distribution of the Taconite Production Tax.

As an example of the economic influence of this tax, in 2011 the City of Virginia received just over \$1,000,000 in direct revenue from Taconite Production Tax distributions (about 10.4 percent of all such funds are paid directly to cities). Additional local benefits from the Taconite Production Tax came through aid to the local school district, property tax relief, and projects and programs administered by IRRRB. For

reference, the City of Virginia had a total 2012 property tax revenue capacity of \$3,844,822, demonstrating that the Taconite Production Tax is an important component of the City's budget.

Mining operations are subject to compliance with a number of permits. If compliance is not achieved, operations can be jeopardized. In the vicinity of the existing easement agreement area, UTAC has a permit to mine from the DNR and other environmental permits (e.g., air quality and National Pollutant Discharge Elimination System (NPDES)) from the Minnesota Pollution Control Agency (MPCA). UTAC's permit to mine boundary is shown in [Figure 4.2-1](#) and excludes the existing easement agreement area but includes land on both sides of the easement. The MPCA air quality permit requires UTAC to conform to air quality standards at its permit to mine boundary. The existing easement agreement area is outside the permit to mine limits and is not subject to these air quality standards.

UTAC's mine pit operates under an air quality permit to ensure compliance with federal and state air quality regulations. The primary criteria pollutants emitted from an open pit mine are particulate matter (PM), PM₁₀, and PM_{2.5}.⁶ The US Environmental Protection Agency's (USEPA) current National Ambient Air Quality Standards (NAAQS) for PM₁₀, based on a 24-hour average exposure, is 150 micrograms per cubic meter (µg/m³), which should not be exceeded more than once per year on average over three years. The PM_{2.5} threshold is based on a 24-hour average exposure of 35 µg/m³ averaged over three years. In addition, the MPCA has a state PM standard for a maximum 24-hour concentration, not to be exceeded more than once per year, of 260 µg/m³ for the primary standard and 150 µg/m³ for the secondary standard (Minnesota Rules, part 7009.0080). These standards are applicable at the mine boundary. The existing US 53 roadway is outside of UTAC's mine boundary.

Recent business risk assessment modeling for the proposed Build Alternatives has been conducted by UTAC and discussed with MPCA, EPA, and MnDOT regarding potential for mine particulate emissions depending on the new location of US 53. The road location in relationship to UTAC's operations will affect the potential emission levels at the mine boundaries. For example, being located closer to haul roads, stockpile locations, and crushing functions has a higher potential for increased particulate emissions. Since it is UTAC's responsibility to monitor and maintain compliance with air quality standards at its permit to mine boundary, it has conducted a qualitative analysis to determine the business risks (potential air quality non-compliance) the road location alternatives could have on its mining operation.

4.2.3 Environmental Consequences

Certain direct economic impacts, such as potential for non-mining business property acquisitions or relocations, and property access changes are evaluated in more detail in Section 4.1 and are not reported here.

4.2.3.1 No Build Alternative (Easement Agreement Area Closed)



Areawide Economic Impacts

Due to concerns raised regarding potential business and economic impacts that could result from eliminating an existing crossing of the Biwabik Iron Formation (as would occur under the No Build Alternative and W-1A Alternative considered in 2013 Scoping), an Economic Impact Study was conducted (McComb Group and SEH, 2014). This study compared the Build and Existing US 53 Alternatives to the US 53 reroute that would be utilized under the No Build Alternative. This analysis used the same assumptions regarding Co. 101 as described in Chapter 3: Transportation Analysis, where Co. 101 was assumed to be closed by UTAC by the year 2024. This is based on reports from UTAC that it may close the road in the near future for mining purposes; therefore, Co. 101 was evaluated as open before 2024 and closed after 2024 in order to address potential worst case impacts. The following provides a summary of the findings.

⁶ Particulate matter (PM) is the term for particles and liquid droplets suspended in the air. Particles come in a wide variety of sizes and have been historically assessed based on size, typically measured by the diameter of the particle in micrometers. PM_{2.5}, or fine particulate matter, refers to particles that are 2.5 micrometers or less in diameter. PM₁₀ refers to particulate matter that is 10 micrometers or less in diameter.

■ Travel Distance and Time

Travel times were developed and documented in the Economic Impact Study as well as the Traffic Analysis Technical Report (CH2M Hill, 2013). The travel times reported in these documents vary slightly due to differences in end points used for analysis and rounding to the whole minute. For purposes of this Draft EIS, the times provided in the Traffic Analysis Technical Report are referenced throughout, and details are provided in Chapter 3: Transportation Analysis.

Both the travel time study and a benefit-cost study⁷ show a high user cost incurred with the relocation of US 53 to the No Build reroute (west). Travel times were compared between business centers rather than to specific businesses or business types. Every vehicle trip between the city of Virginia and either city of Eveleth or Gilbert, and the business centers within these areas (Figure 4.2-2), would have travel time increases of nine minutes (Eveleth) to 21 minutes (Gilbert) based on increased trip lengths (Tables 3.1-5 and 3.1-6).

Section 3.1.3 summarizes the changes in both distance and travel times that would occur for the Build Alternatives compared to the No Build Alternative. The No Build Alternative would negatively impact the connectivity of existing business concentrations to the surrounding local community, thereby making it less convenient to access these businesses. This is evidenced by travel distances and travel times which would more than double under the No Build Alternative from Virginia to Eveleth and more than triple to Gilbert. Impacts on individual businesses would vary widely as customer-business connections vary depending on business characteristics. A potential array of economic impacts resulting from the increased travel time was further investigated.

The changes in traffic counts resulting from the closing of US 53 (No Build Alternative) between Virginia and Eveleth would have detrimental impacts on businesses located in Virginia, Midway, Eveleth, and Gilbert along MN 135 west of MN 37. Increased traffic counts resulting from the No Build Alternative may have temporary positive impact in downtown Eveleth as long as the Co. 101 shortcut is in operation. In 2024, assuming Co. 101 is closed by UTAC, traffic counts would be severely reduced, and Eveleth businesses would suffer accordingly. The closing of Co. 101 would result in the worst case impacts to Eveleth businesses; if Co. 101 would remain open, Eveleth would be impacted by congestion rather than elimination of through traffic. The additional traffic volumes on the No Build Alternative route may benefit the convenience retail node located at the intersection of MN 37 and Co. 7.

■ User Costs

The benefit-cost analysis (vehicle miles traveled and operating costs compared to vehicle hours traveled) determined that the rerouting of traffic to the west under the No Build Alternative would result in increased user costs between 2017 and 2037 of over \$765 million (an increase from \$1.14 billion for the Existing US 53 and Build Alternatives to \$1.91 billion for No Build Alternative (in 2013 dollars)) due to changes in travel times between the Quad Cities.

■ Commuter Costs

Based on 2011 employment numbers, it was estimated that about 5,500 employed residents in the study area would experience increased travel times as a result of the No Build Alternative. Affected commuters are expected to increase to about 6,000 in 2017, 6,900 in 2024, and 8,600 in 2037. The estimated total user costs borne to commuters for the period 2017 to 2037 is \$324 million (in 2013 dollars). These commuters are included in the benefit-cost analysis described above but demonstrate how the rerouting of travel under the No Build Alternative would affect one specific user group.

The annual impact on individual commuters represents a significant portion of their income. Workers living or working in Gilbert or other East Range cities and commuting over the

⁷ See Chapter 9: Cost Analysis for more information on the benefit-cost study

current US 53 route would drive an additional 7,650 miles annually and spend an additional 152 hours commuting with the No Build Alternative. Additional annual travel and time costs for each employee are estimated at \$4,653 (in 2013 dollars). Annual increased commuting costs of this magnitude would cause workers to consider changing either their home or work location.

■ Retail Impacts

Virginia, Mountain Iron, and Eveleth contain the Quad Cities' largest concentration of retail stores and services. Increased travel and time costs associated with rerouting travel under the No Build Alternative would have broad economic impacts on residents, businesses, and visitors to the area. The increases in travel times would change shopper behavior. Some residents of the Iron Range already shop in the Duluth area for destination retail goods and services. Given the larger concentration and variety of retail stores and services in Duluth, some shoppers would change their shopping patterns to combine purchases of goods that they currently buy in Virginia to more frequent trips to Duluth, diverting sales from the Virginia retail areas to stores in Duluth.

Virginia/Mountain Iron: The largest retail concentration is in Virginia and the eastern portion of Mountain Iron. Virginia/Mountain Iron retail sales in 2017 are estimated at \$560 million⁸ (in 2013 dollars). Market research found that 33 percent of these sales (\$183 million) were derived from customers living in the East Range area (i.e., Hoyt Lakes). The longer drive time associated with a shopping trip to Virginia/Mountain Iron from East Range cities (up to 45 minutes one way) under the No Build Alternative was estimated to result in a sales transfer (i.e., people choosing another area in which to shop) of \$41 million or 7.4 percent of total sales in the 2017- 2023 period. Most of this 7.4 percent was assumed to transfer to Duluth and Hermantown (about 90 minutes from Hoyt Lakes), which have much larger retail areas, offer greater selection, and shoppers currently use this destination for specific services. Some convenience goods and service (daily needs) spending would transfer to businesses in East Range cities.

In 2024, Virginia retail sales are expected to be about \$645 million (in 2013 dollars), with \$211 million derived from shoppers residing in the East Range area. Of this amount, \$95 million (14.7 percent) of total sales are estimated to be transferred to retail stores in other locations.

Reduced retail sales in Virginia are estimated to result in a loss of 372 jobs between 2017 and 2023, increasing to a loss of 844 jobs after 2024.

Eveleth: Market research found that 34 percent of Eveleth retail sales are derived from customers living in Virginia and cities to the west and north. Eveleth's retail sales are estimated at \$87 million in 2017 with \$30 million derived from shoppers living to the west and north. Retail sales transfer resulting from the No Build Alternative is estimated at \$9 million (10.5 percent) of retail sales.

Retail sales transfer would increase if the Co. 101 shortcut is closed by UTAC (assumed by 2024). Total 2024 retail sales are estimated at \$100 million with \$34 million derived from shoppers living west and north of the Biwabik Iron Formation. Sales transfer is estimated at \$20 million of estimated 2024 retail sales.

Reduced retail sales at Eveleth retail establishments would result in the loss of an estimated 76 jobs between 2017 and 2023, increasing to 154 jobs lost in the 2024-2037 period.

■ Business Impacts

Businesses in the study area make deliveries or service calls to customers living on either side of the Biwabik Iron Formation, resulting in frequent trips using existing US 53. Based on business survey responses, the estimated increased travel and payroll cost to local businesses would be \$46 million in the period from 2017 to 2023, increasing to \$97 million annually in the period from 2024-2037.

⁸ Based on estimated number of retail establishments, estimated retail sales, employment, and payroll data from the Census Bureau and Minnesota Department of Revenue

■ Public Sector Impacts

Eliminating the current US 53 route between Virginia and the East Range cities would have significant impacts on community services, affecting budgets for emergency and support services, school transportation, and other services due to expanded infrastructure (e.g., additional fire station) and additional mileage to maintain the same services (e.g., bus routes, emergency service routes). Residents living in the Quad Cities, together with other East Range cities, depend upon shared services making travel among communities frequent and necessary. Shared services include ambulance, police, fire, K-12 education, special education, a two campus community and technical college, St. Louis County Social Services, and economic development agencies. The City of Virginia has estimated an increase in annual expenses of \$3.6 million and in capital expenditures through 2037 of over \$24 million as a result of the reroute of travel under the No Build Alternative (based on estimates for increased infrastructure and travel time to maintain existing services).

Mine Operation Impacts

Because the No Build Alternative closes the existing easement agreement area and includes no other highway construction within or near the UTAC mine, it would have little or no direct impact on mineral resource accessibility or the mine's business volume since rail is the primary ferrous resources transport method. However, due to extended travel times, it may impact employees getting to/from work, deliveries to/from the mine, and other emergency and support services it may depend on for daily operations, but these impacts would be relatively minor. Since the No Build Alternative would affect no areas identified with ferrous resources, it is estimated to have no measureable impact on Taconite Production Tax generation.

4.2.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



Areawide Economic Impacts

The Existing US 53 Alternative would have no impact on travel times, as compared to the existing condition, and, therefore, no effect on area economics or businesses.

Mine Operation Impacts

This alternative would present a conflict with UTAC's future access to ferrous resources within the existing easement agreement area and/or north of US 53. The amount of ferrous resources located within these areas is not known precisely but is estimated to be in greater quantities within the existing easement agreement area than within the M-1, E-1A, or E-2 alignments. Much of the ferrous resources within the existing easement agreement area would remain inaccessible to future mining under this alternative. Because the Taconite Production Tax is paid in lieu of local property taxes (Minnesota Statutes section 298), there would be no direct property tax revenue impacts due to loss of production; however, a reduction of local revenue from the Taconite Production Tax due to reduced production could have an economic impact on the Quad Cities.

In addition, maintaining mining access to both sides of US 53 is important to UTAC's future mining business operation north of the existing US 53 corridor. Actual mining of the ferrous resources is only one step. Access to crushing equipment to process the ferrous resources is also vital to making those resources available for commercial use. UTAC's crushing equipment is located south of the existing US 53 easement agreement area, and UTAC has stated that it is not feasible to relocate the crusher or add a second crusher north of the easement. In order to get mined materials to the crusher and/or to the rail for export, access under US 53 would be required. Additionally, UTAC has explained to MnDOT that they rely on several types of ferrous resources to compose a single commercial product, and prohibiting or limiting mining in the area north of US 53 may prevent the recovery of a certain type of resource that is needed to blend with resources from other areas. Therefore, if such an agreement could be reached to allow a US 53 easement, it may include damages paid for loss of access to resources north of the easement as well as resources within the existing easement agreement area.

4.2.3.3 Build Alternatives (Alternatives M-1, E-1A, and E-2)



Areawide Economic Impacts

The Build Alternatives would have no measureable economic impact as a result of changes in travel times as compared to the existing condition. Travel time differences for these alternatives generally vary less than three minutes from the existing condition. The economic study indicated that from an economic standpoint, the time differences are not substantial enough to change behavior. For all Build Alternatives, road closures for blasting would occur at a frequency similar to the existing condition.

There are a variety of property types, including commercial, industrial, and residential, in the area around the 2nd Avenue interchange, and this location provides an important connection to the east side of Virginia. The new at-grade access would offer full access to 2nd Avenue from both directions (via the new Southern Drive intersection for Alternative M-1) versus the current partial access. This added accessibility would be beneficial to the properties at the south end of 2nd Avenue and elsewhere in Virginia. Similarly, creating a new at-grade intersection at MN 135 to replace the existing interchange (under Alternative M-1 and the Alternative E-1A and E-2 Intersection Options) may benefit development potential through improved local access opportunities near this intersection as well. If the full-access compressed diamond interchange option is selected with either the Alternative E-1A or E-2 Interchange Option, similar development opportunities may occur near the new interchange.

Mine Operation Impacts

- **Alternative M-1:** This alternative would be located within the operating UTAC mine, primarily along an area that was previously mined and partially backfilled (the Auburn Pit). However, this alternative still presents potential operational issues for the mine as there are ferrous resources remaining on both sides of this alignment. Mining on both sides of the new road alignment would require US 53 design and construction measures to minimize the roadway footprint in the mine to limit conflicts with ferrous resource reserves (see mitigation discussion below). Therefore, road design methods would be considered to limit the conflicts with ferrous resource access and mine operations.

This alternative also presents a conflict with UTAC's future access to ferrous resources below or directly adjacent to the M-1 alignment. UTAC conducted a business risk assessment to estimate the ferrous resources that would be excluded from production based on the Alternative M-1 concept plans, proposed right-of-way, and mining setbacks needed for operations. This results in a strip through the mine approximately 1,100 feet wide that would not be mineable using current setback and mining practices (Figure 4.1-8). Although the amount of ferrous resources encumbered by the M-1 alignment is estimated to be less than quantities within the existing easement agreement area (as a result of previous mining activity), the inability to access these resources would adversely affect UTAC's business operations. Most of the ferrous resources within the existing easement agreement area would be accessible to future mining under this alternative; therefore, it would be available for production and generation of Taconite Production Tax, although the ferrous resources within and adjacent to the M-1 corridor would not be accessible.

Another potential business impact of this alternative could result from routing a public roadway closer to or through the existing mine pit. The USEPA's NAAQS set allowable concentrations of air pollutants in any location the public can access. The proximity of Alternative M-1 to the mine pit might impact UTAC's ability to meet ambient standards for receptors on the highway without altering its current operation. As described in Section 4.2.2, PM, PM_{2.5}, and PM₁₀ are the primary air pollutants emitted from a mine pit. The standard thresholds for these pollutants are based on an average exposure to particulates for a receptor, in this case on the road, over a 24-hour period. Because the NAAQS do not provide exceptions for exposure to non-stationary receptors such as cars, USEPA has indicated that the PM, PM_{2.5}, and PM₁₀ standards would apply to Alternative M-1 alignment. UTAC's air quality modeling indicates that without modifying its current operations, the PM₁₀ standard would not be met on the northern quarter of the proposed alignment segment through the mine (Appendix

E). MPCA staff discussed modeling protocols with UTAC but did not review the model in detail as the model's purpose was to inform UTAC regarding the level of business risk it would assume if it needed to alter its operations to meet the current standard and to assess the margin of safety it has to meet potential future changes in the standards. The impact to UTAC could be large under this alternative if the mine needed to modify its current operations or alter planned operations (e.g., use larger trucks to reduce number of trips, relocate a crusher, limit mining operations near road) to meet NAAQS. Additionally, meeting the NAAQS under this alternative could make it challenging to permit future modifications to the mine. See Section 4.2.4 for options to address this risk.

Throughout the process of developing and refining this alternative and analyzing effects, coordination has been taking place with RGG/UTAC as the owner and operator of the mine. During this time, UTAC has also been conducting its own examination of routes and potential impacts to mine operations in the context of current operations, future plans, regulations, and changing economics that directly affect the industry. Based on its ongoing examination of issues regarding the mine, UTAC has identified concerns related to Alternative M-1 (see [Appendix C](#) for correspondence from UTAC dated March 2014). With implementation of this alternative, UTAC believes it would not be able to mine an area of significant ferrous resources, reducing the life of the mine and thereby limiting the positive, long-term employment and economic benefits of the operation for the surrounding communities. This, combined with potential blasting setback impacts and safety risks of road construction within an active mine, has led UTAC to determine they cannot risk the future viability of the mine by encumbering ferrous resources, creating an environmental compliance risk, or accepting health and safety hazards that come with Alternative M-1.

- **Alternative E-1A:** This alternative may present a minor conflict with future access to ferrous resources, as the alternative skirts the north and south edges of the Biwabik Iron Formation, resulting in some mining setbacks from the new road alignment ([Figure 4.1-10](#)); however, remaining resources are limited. Even though this alignment crosses the existing UTAC permit to mine boundary, the majority of the alignment has been previously mined, and it is believed that the alignment's relative encumbrance of ferrous resource reserves would be less than other alternatives. Ferrous resources are present on this alternative, but low ore grades and, to a lesser extent, inaccessibility due to estimated mining setbacks from buildings in the city of Virginia greatly diminish their value. There are potential impacts to the ability to explore for and mine non-ferrous metallic resources on School Trust lands within the proposed right-of-way for this alternative. MnDOT is in the process of evaluating core samples to better understand the quantity and quality of ferrous and non-ferrous metallic resources within this alternative. Analyses will be completed in 2015 and available results summarized in the Final EIS for the preferred alternative or as otherwise appropriate to update the Draft EIS findings. The potential for mineral resource recovery conflicts with Alternative E-1A is recognized.

Similar to Alternative M-1, UTAC assessed the potential future business risk of routing a public roadway (Alternative E-1A) through its existing permit to mine boundary area. Under Alternative E-1A, UTAC could plan ahead for strategic stockpile and haul road locations to minimize air quality risks near the new road alignment. UTAC's business risk assessment modeling showed low business risks for the Bridge Option and higher risks under the RSS Option. UTAC has indicated that with the higher elevation and free air flow under the bridge, the Bridge Option would pose lower risk for air quality-related concerns compared to the lower elevation and embankment of the RSS Option. The RSS Option may direct air flow toward the road, and UTAC may be required to further alter operations to meet the PM₁₀ standard. Therefore, the Alternative E-1A Bridge Option is not expected to result in an air quality-related business risk to the existing mine operations due to the applicability of ambient air quality regulations, based on a qualitative risk analysis conducted by UTAC. With the RSS Option, UTAC has air quality-related business risk concerns similar to those discussed above for Alternative M-1. With regard to blasting setbacks, a greater area of the mine would be encumbered by the RSS Option than the Bridge Option due to the width of the fill section. Neither option would be constructed within an active mine area, thus having low safety concerns.

- **Alternative E-2 (Straight and Curved Setback Options):** This alternative presents a conflict with future access to ferrous resources, as the alternative skirts the north and south edges of the permit to mine

boundary, resulting in potential mining setbacks from the new road alignment (**Figure 4.1-12**). However, it is outside of the existing UTAC permit to mine boundary. Alternative E-2 also has potential to present a conflict with non-ferrous metallic resource exploration and mining of resources such as gold. Vermillion Gold, Inc. has a lease with the State of Minnesota to explore for, mine, and remove non-ferrous metallic resources near the Alternative E-2 alignment on School Trust land. The potential for a non-ferrous metallic resources mining business, and its configuration (open or underground mining), has not been identified; however, the potential for mineral resource recovery conflicts with Alternative E-2 is recognized. MnDOT is in the process of evaluating core samples to better understand the quantity and quality of ferrous and non-ferrous metallic resources within this alternative. Analyses will be completed in 2015 and available results summarized in the Final EIS for the preferred alternative or as otherwise appropriate to update Draft EIS findings.

Alternative E-2 is located outside the northeastern edge of the existing permit to mine boundary and further from the current mine operations and existing roadway. Based on the location of the alignment relative to future mining activities and UTAC's business risk assessment, Alternative E-2 is not expected to result in a business risk to the existing mine operations due to the applicability of ambient air quality regulations as this alternative is outside the existing operation and permit to mine boundaries and is less likely to impact current and future planned operations at the mine. As with Alternative E-1A, construction would not occur within an active mine; thus, Alternative E-2 has lower safety risks than Alternative M-1.

4.2.4 Avoidance, Minimization, and Mitigation Measures

4.2.4.1 Avoidance and Minimization Measures

Measures for Mining Operation Impacts

In developing the Build Alternatives, MnDOT has made efforts to avoid/mitigate impacts to known mineral reserves, to the extent possible, to minimize the economic impacts to mineable mineral reserves. All potential business risk costs to MnDOT (potential damages) have been incorporated into the cost range estimates for each alternative (see Chapter 9: Cost Analysis).

■ No Build Alternative

This alternative is outside the permit to mine boundary and, therefore, does not pose a risk to mining operations with regard to (air quality compliance) business risk.

■ Existing US 53 Alternative

By definition, this alternative does not avoid the fundamental mining business conflict of the existing easement agreement area because it would encumber iron ore and, therefore, affect the potential life of the mining operation.

■ Alternative M-1

MnDOT and UTAC worked to identify measures to minimize potential risk for air quality compliance impacts on UTAC's operations through roadway design, minimizing mine dust generation, and development of a plan to minimize potential exposure of highway users to mine air emissions through incorporation of intelligent transportation system (ITS) and highway design measures. One of the measures MnDOT incorporated to minimize the potential for air quality concerns was to design the road elevation for Alternative M-1 as high above the active mine area as possible. The road profile for this alternative was raised approximately 20 feet. On the northern quarter of the alignment, however, due to the touchdown point elevation that the alignment needs to tie into existing development, the profile in this area could not be raised high enough to eliminate potential air quality standard compliance risks. In coordination with MPCA and UTAC, the air quality model revealed that up to $\frac{3}{4}$ of the M-1 alignment through the mine would be in compliance with current standards. In addition, MnDOT has identified measures (described in Section 4.2.4.2) that could be used to minimize risk or highway user exposure within the mine segment of the highway for the M-1 Alternative.

UTAC has evaluated additional measures that would minimize air quality issues near the road (described in Section 4.2.4.2). These are largely measures that would reduce dust generation. However, according to UTAC's risk assessment, these measures would not ensure that UTAC would meet the air quality standards at the new road alignment. This information was shared with MPCA and USEPA staff; however, since these measures may not result in compliance with the air quality standards, they would not eliminate the business risk related to non-compliance with air quality permit thresholds for Alternative M-1.

■ Alternative E-1A

Based on UTAC's business risk assessment for the Bridge Option, UTAC can manage its operations within the permit to mine area to remain in compliance with air quality permit requirements resulting in low risk potential to future mine operations.

The potential risk to private mining has been reduced by routing the alignment through previously mined areas and has limited risk to mineral resources by running the alignment along the submerged haul road embankment, which has been previously mined.

■ Alternative E-2 (Straight and Curved Setback Options)

This alternative is outside the permit to mine boundary and, therefore, does not pose a risk to mining operations with regard to (air quality compliance) business risk.

The potential risk to private mining has been reduced by routing the alignment around the current permit to mine area and has limited risk to mineral resources by running the alignment along Landfill Road, which is near the southeast edge of the Biwabik Iron Formation.

4.2.4.2 Mitigation Measures

Measures for Travel Time Changes

The changes in travel time for all alternatives are directly related to the changes in the distance of the alignment or reroute. The Build Alternatives have little impact to travel times and, therefore, no identified economic impacts, requiring no mitigation measures. The No Build Alternative would be the only alternative with substantial economic impacts due to travel time changes; however, there is little that can be done to improve travel times under the No Build Alternative due to the reroute alignment length.

Measures for Mining Operation Impacts

■ Existing US 53 Alternative

By definition, this alternative does not avoid the fundamental mining business conflict of the existing easement agreement area because it would encumber iron ore and, therefore, affect the potential life of the mining operation.

■ Alternative M-1

This alternative does not completely avoid the mining business conflict of the M-1 alignment through the mine. This alternative minimized the roadway footprint within the mine, to the extent possible (2:1 side slopes instead of 4:1) reducing the road footprint from an average of 900 feet to 450 feet, and it also provides accommodations (two bridges) to allow access for mining on both sides of the new US 53. Standard mine operations require a 300 foot setback from the new right-of-way resulting in an average 1,100 foot wide corridor through the mine that would not be mineable, encumbering more ferrous resources than UTAC and MnDOT had anticipated.

In an effort to minimize business risks to mine operations due to air quality permit compliance concerns, MnDOT investigated the potential to provide a physical barrier over the roadway for this alignment to prevent user exposure to potential PM10 exceedances from mine dust. This analysis is documented in

two technical memos⁹ which are included in **Appendix E**. Two tunnel options were considered that included construction of a three-sided concrete cover that in effect creates an “elevated tunnel” that US 53 would travel through. Option 1 spanned the full permit to mine limits (6,100 feet) to avoid any exposure within the permit area and to minimize the air handling equipment necessary. Option 2 shortened the length of tunnel to extend just beyond the potential exceedance area (3,000 feet) with air filtration to treat potential dust levels at the portals. The combined structure and air handling (including fire safety) equipment result in a cost range of \$65 to \$130 million of additional construction cost for Alternative M-1 (in addition to the roadway cost), which may not be feasible given other project costs (see Chapter 9: Cost Analysis). These options have not been evaluated by UTAC to confirm whether they would eliminate the potential business risk from air quality compliance.

■ **Alternative E-1A**

Alternative E-1A does not avoid the future potential conflict with known ferrous resources or non-ferrous metallic mineral reserves owned by the State of Minnesota School Trust and by private interests. MnDOT has conducted a series of borings along this alignment to estimate the amount and quality of ferrous resources that are present. Core samples collected from these borings have confirmed that there are limited ferrous resources along the E-1A alignment except on the west edge of the Rouchleau Pit, where the resources are likely too close to existing structures to be mined. The RSS Option was assumed with steep, engineered soil slopes in order to minimize the road footprint across the Biwabik Iron Formation. A bridge at the east edge of the alignment could be provided at a future time that would allow mine access under the roadway if it is required for UTAC mining operations at that time (estimated 30 + years in the future).

The Bridge Option would place the road on a bridge structure across the pit, eliminating the need for fill within the Rouchleau Pit, allowing the road elevation to be increased and drain to the west side of the pit. This bridge would allow for future mine access to the north but may restrict distance from the bridge that mining/blasting activity may occur.

■ **Alternative E-2 (Straight and Curved Setback Options)**

Alternative E-2 does not avoid the future potential conflict with known ferrous resources or non-ferrous mineral reserves owned by the State of Minnesota School Trust and by private interests. MnDOT has conducted a series of borings along this alignment to estimate the amount and quality of ferrous resources that are present along Landfill Road. These borings have confirmed that ferrous resources are at least 200 to 400 feet west of Landfill Road, which indicates that most of the ferrous resources would remain accessible with this alternative. Mining beyond the current permit to mine limits to the north cannot be predicted; none of the nearby mine owners or operators have this area identified in their current mining plans, and, therefore, this area is not likely to be mined for a number of decades unless a substantial shift occurs in market demand.

4.3 Public Park, Recreational, Wildlife Management, and Section 4(f)/6(f) Lands

This section provides information about public recreational and natural resource areas within the study area, and potential project impacts to identified resources. Section 4(f) and Section 6(f) applicability are addressed within this section for the study area’s parks, recreation, and natural areas. The discussion of Section 4(f) applicability related to historic sites is addressed in Section 4.4. **Figure 4.3-1** provides the locations of the public parks, recreational areas, and trails within the study area.

⁹ Highway 53 M-1 Alignment Air Quality Mitigation Memo (CH2MHill, 2013) and Structural Cost Estimate for Elevated Tunnel for US 53 Alternative M-1 Air Quality Mitigation (Kimley-Horn, 2013)

4.3.1 Regulatory Context and Methodology

4.3.1.1 Regulatory Context

Because some of the resources identified in this section may have potential to be impacted by one or more project alternatives, the regulatory requirements for defining Section 4(f) and 6(f) resources and impacts are provided for reference.

Section 4(f)

Section 4(f) of the 1966 Department of Transportation (DOT) Act (49 USC 303, 23 USC 138)¹⁰ provides protection for publicly owned parks, recreation areas, historic sites (public or private), and wildlife refuges from conversion to a transportation use. Section 4(f) applies only if the following criteria are met:

- Federal transportation funds are anticipated or an action is being taken that requires approvals by a federal transportation agency
- The property is publicly owned and/or open for long-term public recreational use, or meets historic property criteria if privately or publicly owned
- When on publicly owned multiple use lands, recreation is the primary purpose/designated use¹¹

The Section 4(f) evaluation process requires that any impacts from direct use¹² of a publicly owned park, recreation area, historic site, or wildlife or waterfowl refuge for highway purposes be evaluated in context with the proposed highway construction/reconstruction activity.

When a Section 4(f) use is anticipated, applicable regulations also require consultations with the official having jurisdiction over the site to verify the site's significance and coordinate conclusions on use of the land, including efforts to avoid or mitigate the impacts.¹³

FHWA may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:

- There is no feasible and prudent alternative to the use of land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 774.17); or
- The use is *de minimis* (23 CFR 774.3). For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f) (23 CFR 774.17).

Section 6(f): Land and Water Conservation Fund Act

Lands improved with Land and Water Conservation Fund Act (LAWCON) funds are subject to Section 6(f). LAWCON, which is intended to help preserve, develop, and provide accessibility to outdoor recreation resources, requires that lands planned, developed, or improved with these funds cannot be converted to anything other than outdoor recreational use unless replacement land of at least equal fair market value and reasonably equivalent usefulness is provided. Any time a project will result in a land use conversion of public recreational lands that qualify under Section 6(f), replacement land of equal or greater use must be provided, regardless of how the project is funded.

¹⁰ In January 1983, as part of an overall reorganization of the DOT Act, Section 4(f) was amended and codified in 49 USC Section 303. However, the regulation is more commonly known as "Section 4(f)."

¹¹ FHWA Section 4(f) Policy Paper, July 20, 2012

¹² Section 4(f) "use" is defined under FHWA guidelines. A Section 4(f) use includes acquisition, temporary or permanent occupancy, or proximity impacts that result in substantial impairment of the purposes for which the Section 4(f) resource exists. Indirect use, or constructive use, can occur when a project does not incorporate any Section 4(f) resource land, but proximity impacts substantially impair activities, features, or attributes of the qualifying resource.

¹³ FHWA regulations (23 CFR 771.135 (c)) state that Section 4(f) resources are presumed to be significant unless the official having jurisdiction over the site concludes that the entire site is not significant. Even if this is done, FHWA must make an independent evaluation to assure that the official's finding of significance or non-significance is reasonable.

Easements that do not involve conversion of outdoor recreational lands to non-recreational use are not subject to Section 6(f) requirements (e.g., provision of access to the property for maintenance, slope easements, etc.). Conversion of recreational property to a non-recreational use would require prior approval by the Commissioner of the DNR as well as from the National Park Service (NPS).

The DNR maintains a list of properties that are subject to Section 6(f) requirements, which is available on the DNR's LAWCON webpage.¹⁴

School Trust Property

The State of Minnesota has approximately 2.5 million acres of surface and minerals in School Trust land status (defined in Minnesota Statutes section 92.025), mostly in the northern part of the state. Such publicly owned lands, set aside in trust for the financial support of schools, are a long established tradition in the United States. Revenue from School Trust lands is generated from many activities, including sale of timber and gravel, mining leases, state forest campground fees, lakeshore leases, easements and utility licenses across School Trust land, the sale of a few parcels of land, and several other types of surface use. In addition, revenue is generated from rents and royalties on iron ore removed from Trust land, leases to remove peat, non-ferrous metallic mineral leases, and several other types of mineral rights use.¹⁵ School Trust land is managed according to the plans for the management unit in which it is located.¹⁶

4.3.1.2 Methodology

The study area for identification of park, recreation, and wildlife management resources includes areas generally near or adjacent to the project alternatives. Potential impacts were identified to resources generally within the areas of evaluation as shown in **Figure 4.3-1** and described in Chapter 2: Alternatives. For Alternative M-1, this area was used to calculate potential impacts. For Alternatives E-1A and E-2, the areas of evaluation were widened in areas where there is potential for design adjustments in the alignment to accommodate currently undefined solutions to known engineering challenges (e.g., existing areas of unstable fill and bridge type). Therefore, to calculate potential impacts without overestimating them due to the widened area of evaluation, a corridor averaging 200-400 feet wide was assumed for Alternative E-1A, and a corridor averaging 150-300 feet wide was assumed for Alternative E-2 (the Alternative E-1A RSS Option requires a larger footprint).

The identification of park, recreation, and wildlife properties involved review of mapping and data sources for publicly owned lands in the study area as well as historic sites, whether privately or publicly owned. Additional criteria were then applied to evaluate whether resources were eligible for consideration as Section 4(f) and/or Section 6(f) properties as discussed in the subsections below.

Section 4.3.3 describes potential project impacts to each resource, including determination of whether a Section 4(f) "use" or a Section 6(f) conversion of land would occur. Determination of the "use" of a Section 4(f) resource was made based on definition of "use" in 23 CFR 774.17, guidance provided in FHWA's Section 4(f) Policy Paper (July 20, 2012), and review with FHWA staff.

4.3.2 Existing Conditions

This section describes all existing public recreational resources within the study area and identifies if they have been determined to be Section 4(f) or Section 6(f) properties.

Mesabi Trail on School Trust Land

The segment of the Mesabi Trail located on School Trust land (managed by the DNR) is leased by the St. Louis and Lake Counties Regional Railroad Authority (SLLCRRA) from the State for public recreation use (**Appendix F**). The current lease was signed in November 2011 and is effective for 10 years; however, it

¹⁴ The list entitled Grant-Funded Parks and Natural Areas Subject to Permanent Grant Program Requirements dated 7/28/2014 was checked on October 13, 2014. This list is available at http://files.dnr.state.mn.us/aboutdnr/lawcon/lawcon_1.pdf.

¹⁵ *Minnesota's School Trust Lands Biennial Report, FY 2010-2011*; Minnesota Department of Natural Resources, March 2012

¹⁶ Minnesota Office of the Legislative Auditor (<http://www.auditor.leg.state.mn.us/ped/1998/stl98.htm>)

can be terminated at the discretion of the DNR for just cause at any time. Specific lease terms are found in **Appendix F**. Adjacent segments of the Mesabi Trail are located on privately owned land and do not have long-term easement agreements with the landowners.

Located in northern Minnesota between the cities of Ely and Grand Rapids, the Mesabi Trail is currently 115 miles long.¹⁷ When complete, the trail will be 132 miles long and connect more than 25 communities. The Mesabi Trail system is partially built on old railroad beds, and the trail consists of a 10-foot wide paved surface (typically asphalt) with some trail segments along public roads. Allowed trail activities include bicycling, inline skating, walking, cross-country skiing, and snowshoeing. Wheeled activities (bicycles, inline skates) require a trail permit. The trail passes through forests, meadows, rivers, streams, and lakes and past the edges of the open pit mines. Many campgrounds, local parks, and a variety of recreational opportunities are accessible from the trail. The one-mile segment of the Mesabi Trail within the School Trust land is characterized by forests and lands previously disturbed by forestry and mining activities (**Figure 4.3-1**).

This segment of the trail is accessed from designated trailhead and parking areas:

- In Virginia, about three trail miles northwest of the School Trust property (on the west side of the Rouchleau Pit)
- In Gilbert, about three trail miles east of the School Trust property
- From Mineview in the Sky located on RGGS property along the existing easement agreement area

Alternatives E-1A and E-2 both cross the segment of the Mesabi Trail within School Trust land.

Section 4(f) Determination: Even though this segment of trail is on publicly owned lands, the terms of the Mesabi Trail lease agreement between the SLLCRRA and DNR allow for the lease to be terminated at the discretion of the DNR. Therefore, it has been determined that the segment of the Mesabi Trail on School Trust land is not a Section 4(f) resource west of Landfill Road based on recreational (trail) use designation not being long-term.

Mesabi Trail on Private Land

The overall characteristics of the Mesabi Trail are described above.

West of the School Trust land, the Mesabi Trail is routed on RGGS property along the southwest side of the Rouchleau Pit extending along the northeast edge of Virginia. The SLLCRRA holds a license from RGGS for the trail operation which is revocable by RGGS at any time with a one-year notice, which requires the licensee to vacate the property within 30-days of the license termination date (**Appendix F**). There are no public parks along the privately owned segments of the Mesabi Trail in the study area.

Like the Mesabi Trail on School Trust lands, trail activities include bicycling, inline skating, walking, cross-country skiing, and snowshoeing. Wheeled activities (bicycles, inline skates) require a trail permit. A portion of this trail is also used as the Trail Hawks Snowmobile Spur Trail, as shown in **Figure 4.3-1**.

Section 4(f) Determination: Because this segment of trail is on private land and operates via a license which can be terminated by the landowner at any time with 30 days to vacate, it has been determined that this segment of the Mesabi Trail is not a Section 4(f) resource because the terms of the license did not constitute a long-term public interest.

Iron Range Off-Highway Vehicle Recreation Area (OHVRA) – Virginia Site

This recreation area is located on School Trust land (Section 16, Township 58N, Range 17W), along the east edge of Landfill Road in the US 53 study area. It is owned by the State of Minnesota and managed by the DNR. The OHVRA is 2,700 acres and is master planned to include a 75-mile road/trail system.

¹⁷ St. Louis & Lake Counties Regional Railroad Authority (<http://www.mesabitrail.com/maps-images/interactive-map?about>)

This 2,700-acre area is an expansion of the existing 1,200-acre OHVRA, currently accessed near Gilbert, MN.¹⁸ The state legislature authorized expansion of this site in 1999. The expanded Virginia site will link to the Gilbert site, making for a total OHVRA facility of about 3,900 acres. The Virginia site will be developed exclusively for trail riding for all classes of motorized off-highway vehicles (OHVs).¹⁹

According to the DNR, the OHVRA public recreational use area is only designated for public recreational use on School Trust land to the east of Landfill Road (Figure 4.3-1). The main OHV trail segment to be developed would be roughly parallel to Landfill Road ¼ to ½ mile to the east, crossing the Mesabi Trail in this area. The OHVRA Master Plan Amendment identifies lands west of Landfill Road as unused for public recreation and intended for mine/mineral use (Appendix F). The area west of Landfill Road is within the Biwabik Iron Formation (Figure 1.2-2) and is designated in the Master Plan for potential mineral use (non-recreational use). The DNR verified that the Master Plan designations are correct (Appendix C, January 2013 letter).

Section 4(f) Determination: The recreation area (OHVRA) east of Landfill Road has been determined to be a Section 4(f) resource based on ownership and designated long-term recreational use, whereas the area of OHVRA/School Trust land west of Landfill Road has been determined to not be a Section 4(f) resource because the DNR OHVRA Master Plan indicates mine/mineral use for the area west of Landfill Road and, therefore, has no intended long-term recreational use.

Trail Hawks Snowmobile Club Trail Spur

The Trail Hawks Snowmobile Club Trail Spur, shown on Figure 4.3-1, is a local designated snowmobile route located primarily on RGGs property, with portions of the trail spur operating on MnDOT right-of-way. The portion of the trail in the study area uses part of the Mesabi Trail (private) alignment on the west side of the Rouchleau Pit (user permit required), a culvert/underpass across US 53 (MnDOT right-of-way), and RGGs property (within MnDOT easement) in the segment south of US 53 to Midway. South of the study area, from Midway to Eveleth, the spur runs in MnDOT right-of-way.

The trail south of US 53 is a spur off of the Mesabi Trail leading to motels in Eveleth (the old Holiday Inn and Super 8) and was funded partially by the IRRRB. MnDOT has records of the IRRRB obtaining a permit (1999) to work in the right-of-way for grading the trail then transferring the trail to the Trail Hawks Snowmobile Club. The Club has conducted additional unpermitted clearing in the past few years. However, there is no MnDOT record found showing that the Club applied for or was issued the required Limited Use Permit or provided a certificate of insurance to operate within the existing easement agreement area or MnDOT right-of-way.

In 2002 an old railroad bridge under US 53 was removed by MnDOT, which had served as the US 53 underpass crossing for the trail spur. Local businesses objected to closing the crossing and funding was found to install a box culvert for the trail spur to cross under US 53. The majority of the funding was from the IRRRB, but the Cities of Eveleth and Virginia and MnDOT contributed minor amounts of the cost.

Section 4(f) Determination: The portion of the trail spur within the existing easement agreement area is privately owned by RGGs, with an easement to MnDOT for roadway use. MnDOT has not issued a permit to the Club to operate within its easement. The two areas where the trail is within MnDOT right-of-way (the crossing under US 53 by 2nd Avenue interchange and from Cuyuna Drive south to Eveleth) do not have the necessary Limited Use Permit or liability insurance to operate within MnDOT right-of-way. Therefore, whether within easement or right-of-way, such use can be terminated unconditionally at any time by MnDOT. Based on the temporary nature of this trail spur with regard to permitted use, this trail spur does not qualify as a Section 4(f) resource.

¹⁸ *Iron Range Off-Highway Vehicle Recreation Area Master Plan Amendment for the Virginia Expansion*, Division of Parks and Trails, DNR, January 29, 2010.

¹⁹ This includes all-terrain vehicles (ATVs), off-highway motorcycles (OHMs), and off-road vehicles (ORVs). ORVs include larger vehicles such as 4x4 trucks and jeeps.

City of Virginia Southside Park (also referred to as Pepelnjak Southside Park)

The City of Virginia's Southside Park is located along the north side of US 53, east of 6th Avenue South (**Figure 4.3-1**). The 5th Avenue South historic roadway terminates on the north edge of this park (see also the 5th Avenue Boulevard in Section 4.4). The park occupies 17 acres and includes three outdoor fields, tennis courts, a playground, and a building that contains four indoor courts. Off-street parking is provided at the terminus of 5th Avenue South and off of 6th Avenue South along the north side of US 53.

Southside Park was originally developed in 1914 in relationship to the 5th Avenue Boulevard. It has since been expanded and improved and is included on the list of LAWCON 6(f) holdings. Conversion of any of the properties to a non-recreational use requires approval by the DNR's commissioner, as well as from the National Park Service, when specifically indicated, as is the case for Southside Park.

LAWCON grants that were distributed for the benefit of Southside Park between 1999 and 2012 included:

- 2000: \$3,000 grant to support construction of the multipurpose building
- 2001: \$10,000 grant for handicap-accessible playground equipment

Section 4(f) and 6(f) Determination: Southside Park offers public recreational uses on publicly owned property and has been determined to be a Section 4(f) resource, as well as a Section 6(f) resource.

Table 4.3-1 summarizes the recreational resources evaluated and which resources meet Section 4(f) and 6(f) criteria. Southside Park is the only resource that meets Section 6(f) criteria.

Table 4.3-1. Summary of Potential Section 4(f)/6(f) Recreational Resources

Resource and Type	Public Use?	Ownership ^A	Does Resource Meet All 4(f) Criteria?
Mesabi Trail on School Trust Lands (west of Landfill Road)	Multiple use land including a recreational trail	Public	No – trail is on publicly owned land (State of Minnesota) via a lease that can be terminated at the discretion of the DNR, thus the recreational (trail) use designation is not long-term
Mesabi Trail on Private Lands	Yes – recreational trail	Private	No – trail is on privately owned land (RGGS) by revocable license, thus the recreational (trail) use designation is not long-term
Iron Range Off-Highway Vehicle Recreation Area – Virginia Site (east of Landfill Road)	Yes – planned recreation area east of Landfill Road	Public	Yes – publicly owned (State of Minnesota) designated recreational use area east of Landfill Road (see DNR letter in Appendix C)
Iron Range Off-Highway Vehicle Recreation Area— Virginia Site (west of Landfill Road)	No – planned mining area west of Landfill Road	Public	No – publicly owned (State of Minnesota) designated mineral use area west of Landfill Road; designated as unused area in OHVRA Master Plan Amendment (Appendix F)
Trail Hawks Snowmobile Club Trail Spur	Yes – seasonal recreational trail	Private	No – on RGGS land, has same lease terms as Mesabi Trail (above), and no Limited Use Permit from MnDOT to operate within the right-of-way
Southside Park	Yes – city park	Public; LAWCON funding ^A	Yes – publicly owned park (City of Virginia) meets Section 4(f) criteria, also meets Section 6(f) criteria

^A The study area was reviewed for LAWCON-funded, Section 6(f), properties. Southside Park is the only resource meeting Section 6(f) criteria.

4.3.3 Environmental Consequences

The following summarizes the coordination and evaluation completed for the identified park and recreation resource impacts. The No Build, Existing US 53, and M-1 Alternatives do not have any impact on recreational Section 4(f) or Section 6(f) resources but may have impacts to non-Section 4(f) recreational resources, both of which are noted below. Cumulative impacts to recreational resources are addressed in Chapter 7: Cumulative Impacts.

4.3.3.1 Parklands

Mesabi Trail on School Trust Land

Alternatives E-1A and E-2 cross over this existing segment of the trail. The trail currently crosses Landfill Road at grade. Both alternatives would cross the trail at roughly the same location (see [Figure 4.3-1](#)). For both alternatives MnDOT could provide a trail permit along the east side of each alternative, which could be used by the SLLCRRRA to construct a new Mesabi Trail alignment.

Mesabi Trail on Private Land

Alternatives E-1A and E-2 cross over this existing segment of the trail on the west side of the Rouchleau Pit. The trail currently parallels US 53 then turns north along the west edge of the Rouchleau Pit. Both alternatives would cross the trail at roughly the same location. For both alternatives MnDOT could provide a trail permit along the east side of each alternative, which could be used by the SLLCRRRA to construct a new Mesabi Trail alignment. The trail impact areas are shown in [Figure 4.3-1](#).

Iron Range OHVRA – Virginia Site

Alternatives E-1A and E-2 east of the Rouchleau Pit both follow segments of Landfill Road. Landfill Road defines the west edge of the OHVRA's designated public use area, and, therefore, these alternatives have potential to impact the OHVRA area. As noted in Section 4.3.2 above, the main off-highway vehicle trail for motorized off-road vehicle use is to be developed approximately parallel to Landfill Road $\frac{1}{4}$ to $\frac{1}{2}$ mile to the east, running for about $\frac{3}{4}$ mile through this area, and would not be affected by either alternative. However, each alternative would require acquisition of strips of land along the westernmost fringe of the 3,900-acre OHVRA site (adjacent to Landfill Road). For the Alternative E-1A Intersection and Interchange Options, 4.6 and 5.1 acres of permanent right-of-way would be required, respectively. For both the Alternative E-2 Intersection and Interchange Options, 4.3 acres of permanent right-of-way would be required. See [Figures 4.3-2 and 4.3-3](#).

The lands to be acquired under each alternative are in areas of the OHVRA that are not designated for any specific use, activity, or feature. The purpose of the overall recreation area is for off-road vehicle use; however, those uses would be restricted to developed trails or designated use areas. The impact areas for Alternatives E-1A and E-2 are not located within any special use areas or planned trail corridors in the OHVRA based on the area master plan.²⁰

The DNR was contacted to confirm that development plans remain consistent with the master plan, and the DNR concurred that the areas west of Landfill Road are not designated for present or future recreational use and therefore not Section 4(f) ([Appendix C](#), DNR 2013 letter). Additionally, since the OHVRA is planned as highly active and noise-generating motorized recreational vehicle activity area, the temporary occupancy of OHVRA land east of Landfill Road during construction should not substantially impair activities, features, or attributes of the OHVRA ([Appendix C](#), 2014 DNR letter). Since the public land west of Landfill Road is not used or planned to be used for recreation and the proposed impact areas immediately east of Landfill Road would not affect the use, activities, features, or attributes of the OHVRA, it has been concluded that the Section 4(f) parkland/recreational impact to the OHVRA would be negligible. As a result, FHWA intends to make a de minimis Section 4(f) determination (as described in

²⁰ This includes all-terrain vehicles (ATVs), off-highway motorcycles (OHMs), and off-road vehicles (ORVs). ORVs include larger vehicles such as 4x4 trucks and jeeps.

Section 4.3.4) for this impact and has notified the DNR of its intent. The DNR has concurred with this conclusion (**Appendix C**).

Trail Hawks Snowmobile Club Trail Spur

All of the Build Alternatives (M-1, E1A, and E-2) would remove the 2nd Avenue interchange and thus the bridges that currently go over the snowmobile spur trail. However, removal of these bridges would not interfere with trail use; future mining activity, rather than MnDOT, would result in eliminating this trail segment. Where the snowmobile trail shares the Mesabi Trail corridor, see the Mesabi Trail section for impacts. Because the snowmobile trail does not have a permit to operate within MnDOT's easement agreement area, MnDOT has no obligation to the trail operator.

As shown in **Figure 4.3-1**, Alternative M-1 would require a crossing of the trail spur near Cuyuna Drive and where the new MN 135 connection is made to US 53. To reduce the impact of two crossings and improve crossing safety, a new crossing could be designed in conjunction with the new at-grade intersection for MN 135.

For Alternatives E-1A and E-2, the intent is for the snowmobile trail to co-locate with the Mesabi Trail. In Alternative M-1 the snowmobile trail would need to be rerouted likely along the No Build reroute alignment, as a trail easement across the mine would not be allowed.

Southside Park

No acquisition of land from Southside Park would be required for any alternative. The changes to the adjacent segment of US 53 would be minimal and generally limited to the southbound lanes. Therefore, there would be no Section 6(f) conversion of land and no use of Section 4(f) property.

Table 4.3-2 summarizes the potential impacts to each parkland resource by alternative.

Table 4.3-2. Potential Impacts and Mitigation to Public Park, Recreation, and Trail Resources By Alternative

Resource	No Build Alternative	Existing US 53 Alternative	Alternative M-1	Alternative E-1A ^A	Alternative E-2 ^B
Mesabi Trail on Public Land	No impact	No impact	No impact	Maintain safe trail crossing	Maintain safe trail crossing
Mesabi Trail on Private Land	No impact	No impact	No impact	Trail crossings consolidated to one location	Trail crossings consolidated to one location
OHVRA – Virginia Site (east of Landfill Road)^C	No impact	No impact	No impact	Strip take associated with right-of-way acquisition along Landfill Road (4.6 acres with Intersection Option, or 5.1 acres with Interchange Option); negligible impact to OHVRA activities, features, or attributes	Strip take associated with right-of-way acquisition along Landfill Road (4.3 acres for both the Intersection and the Interchange options); negligible impact to OHVRA activities, features, or attributes

Resource	No Build Alternative	Existing US 53 Alternative	Alternative M-1	Alternative E-1A ^A	Alternative E-2 ^B
Trail Hawks Snowmobile Club Trail Spur	No impacts	No impact	New US 53 crossing of trail at Cuyuna Drive and at new MN 135 connection	No change to trail spur; 2nd Avenue interchange bridges removed over trail; MnDOT to provided trail permit along east side of road for trail (funded by SLLCRRA)	No change to trail spur; 2nd Avenue interchange bridges removed over trail; MnDOT to provided trail permit along east side of road for trail (funded by SLLCRRA)
Southside Park ^{C, D}	No impact	No impact	No impact	No impact	No impact

^A There is no difference between the Alternative E-1A RSS and Bridge Options.

^B There is no difference between the Alternative E-2 Straight and Curved Setback Options.

^C Determined to be a Section 4(f) resource

^D Determined to be a Section 6(f) resource

4.3.3.2 Section 4(f)/Section 6(f)

Based on the information provided in Sections 4.3.2 and 4.3.3, the following conclusions have been made with regard to potential Section 4(f) and Section 6(f) resources. As noted in **Table 4.3-1**, there are two resources (Iron Range OHVRA and Southside Park) that were determined to be Section 4(f) resources and one (Southside Park) that is a Section 6(f) resource.

When Section 4(f) resource impacts are not substantial and there is little potential to affect the function of the resource, a de minimis determination can be made by FHWA. The impacts of a transportation project on a park or recreation area that is considered a Section 4(f) resource and qualifies for Section 4(f) protection may be determined to be de minimis if:

- The transportation use of the Section 4(f) property, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f);
- The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, or attributes of the Section 4(f) property; and
- The official(s) with jurisdiction over the property, after being informed of the public comments and FHWA's intent to make the de minimis impact finding, concur in writing that the project would not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f).

The following describes the potential use of the Section 4(f) resources identified above based on the impacts described in **Table 4.3-2**.

Iron Range OHVRA – Virginia Site

Alternatives E-1A and E-2 have potential to impact the OHVRA. There is a potential for strip acquisition of OHVRA land along Landfill Road based on the estimated right-of-way needed for Alternatives E-1A and E-2, as shown in **Figures 4.3-2 and 4.3-3**. All construction activities would be contained within the proposed right-of-way and, therefore, would not require temporary occupancy of the OHVRA during construction. Based on impact location and the OHVRA and DNR information described previously in Section 4.3.3, the recreational use impacts and temporary construction impacts would be negligible.

Additionally, since the OHVRA is planned as highly active and noise-generating motorized recreational vehicle activity area, the permanent location of the new US 53 alignment or the potential temporary occupancy during construction would not adversely affect activities, features, or attributes of the OHVRA.

The DNR, as the jurisdictional agency for this resource, has been consulted regarding the potential impacts of Alternatives E-1A and E-2 and has indicated the potential impacts would be small because the alignments affect fringe areas of the OHVRA and would not impede the intended use or function of the resource. Therefore, the impact would be negligible to this Section 4(f) resource. The FHWA sent notice of its intent to make a de minimis determination regarding this project to the DNR in a letter dated January 28, 2014 ([Appendix C](#)). DNR concurred with the proposed de minimis determination in a letter dated February 5, 2014, based on proposed construction limits ([Appendix C](#)).

Southside Park

No use or acquisition of land from Southside Park would be required for any alternative. The changes to the adjacent segment of US 53 would be minimal and generally limited to the southbound lanes. As a result there would be no use of Section 4(f) property.

Additionally, there would be no Section 6(f) conversion of land.

4.3.4 Avoidance, Minimization, and Mitigation Measures

The impacts to recreational resources within the existing easement agreement area are not caused directly by the US 53 relocation project; rather, it is the result of the termination of easement rights by RGGS and UTAC. Therefore, MnDOT is not required to mitigate for impacts caused by the easement termination, only those impacts resulting from new road alignments.

4.3.4.1 Avoidance and Minimization

Efforts have been made during alternatives development and preliminary engineering of the various alternatives to minimize parkland and Section 4(f) properties to the extent possible by following previously disturbed areas (roads, mined lands).

According to the DNR, the identified OHVRA parcel impacts are not substantial and are not considered to result in changes to activities, features, or attributes of the recreation area. However, as MnDOT moves forward into more detailed design, opportunities to further minimize the amount of OHVRA land that needs to be acquired for the preferred alternative will be considered. Minor road shifts, steeper side slopes, modified cross section, or trail realignments are potential options that could be considered.

RGGS/UTAC and the SLLCRRA have expressed interest in relocating the Mesabi Trail concurrent with the construction of the new alignment to minimize impacts to trail users. MnDOT has assumed a widened right-of-way that includes room for a trail on the east side of Alternatives E-1A and E-2 for evaluation, in the event that the trail sponsor acquires funding for trail relocation. MnDOT will cooperate with both parties to coordinate concurrent trail construction.

There is no existing access to the OHVRA east of Landfill Road, and the Iron Range Off-Highway Vehicle Recreation Area Master Plan Amendment for the Virginia Expansion (January 2010) states that no access to the site will be allowed from the city of Virginia. Access to the School Trust land on the east and west sides of Landfill Road will be coordinated with the DNR for the selected alternative.

4.3.4.2 Mitigation Measures

Mitigation measures for the impacts of the preferred alternative on the OHVRA will be refined pending consultation by FHWA with the DNR.

4.4 Cultural Resources

4.4.1 Regulatory Context and Methodology

4.4.1.1 Regulatory Context

The cultural resources survey, evaluation, and effects analysis was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulations, 36

CFR 800. This act requires that impacts to historic properties, defined as those listed in, eligible for listing, or potentially eligible for listing in the National Register of Historic Places (NRHP), be considered before implementation of a federal undertaking. MnDOT expects to obtain federal funds for the project. Therefore, it is considered a federal undertaking and must comply with the act and its regulations.

Section 4(f) (described in Section 4.3.1) may also apply to historic properties. Therefore, an assessment was also made below regarding whether historic properties affected by the project may constitute a Section 4(f) "use."

4.4.1.2 Methodology

The following evaluation of archaeological and architectural resources within the study area is derived from the following four reports, which are incorporated herein by reference and available on the project website:²¹

- Phase I and II Archaeological Investigations for the Trunk Highway 53 Relocation Project, Virginia to Eveleth, St. Louis County, Minnesota (Two Pines Resource Group, LLC, 2012)
- Phase I and II Architectural History Evaluation for the TH 53 Relocation, Virginia, St. Louis County, Minnesota (Landscape Research, LLC, 2012)
- Phase I and II Historic Resources Evaluation for the TH 53 Relocation Alternatives E-1A and E-2A, Virginia, St. Louis County, Minnesota (Landscape Research, LLC, 2013)
- Phase I and II Archaeological Investigations for the Trunk Highway 53 Relocation Project (Alternatives E-1, E-1A, and E-2A), Virginia to Eveleth, St. Louis County, Minnesota (Two Pines Resource Group, LLC, 2013)

The Area of Potential Effect (APE) for architectural resources is approximately 450 acres and includes the properties adjacent to portions of the existing US 53 and the Build Alternatives. Where new road construction is proposed, the APE consists of the study area plus approximately ¼ mile in either direction from the centerline. The APE considers direct effects, such as property acquisitions, and indirect effects, including changes in visual qualities and increase in noise levels. Physical, auditory, visual, and atmospheric effects caused by the proposed project to individual properties also includes those to potential mining landscapes. A map of the APE can be found in the Phase I and II Architectural History Evaluation.

The APE for archaeological resources was determined by the MnDOT Cultural Resources Unit (CRU), with concurrence from the Minnesota State Historic Preservation Office (SHPO), to include the area extending 150 feet on either side of the Alternative M-1 centerline, the area extending 300 feet on either side of the Alternative E-1A centerline, and the area extending 200 feet on either side of the Alternative E-2 centerline. The APE also included the No Build Alternative existing right-of-way and the existing easement agreement area for the Existing US 53 Alternative.

The Phase I investigation included literature review and field survey components. During the Phase I survey, all buildings, structures, and landscape features within the APE were viewed by automobile and pedestrian survey. Portions of the APE that were considered to have moderate to high potential for containing archaeological resources were subject to shovel testing. Properties that appeared to be more than 50 years old were recorded on a Minnesota Architecture-History form, on file with SHPO. The initial Phase I properties were evaluated for potential historic significance and integrity based on the four NRHP criteria. Investigations were carried to Phase II, involving intensive literature review, when appropriate. These properties were reviewed by the MnDOT CRU (on behalf of FHWA as the delegated authority) and forwarded to SHPO for concurrence on eligibility ([Appendix C](#)). Likewise, CRU also reviewed eligible properties, determined if there were anticipated impacts as a result of the project alternatives, and reviewed with SHPO.

²¹ <http://www.dot.state.mn.us/d1/projects/hwy53relocation/TechnicalReports.html>

4.4.2 Existing Conditions

No architectural or archaeological properties that have been previously determined NRHP-eligible were identified within the APE. Of the 105 architectural properties evaluated during the 2012 Phase I survey, seven properties were carried forward to the Phase II level. Two additional properties were evaluated during the 2013 Phase I survey. One of these properties was carried forward to the Phase II level. The 2012 archaeology report identified one historic site, Rouchleau Shops. The revised archaeological report identified one additional site in the vicinity of Landfill Road and the Mesabi Trail. **Table 4.4-1** summarizes these eight architectural and two archaeological properties and the outcome of the final eligibility determination from SHPO. One historic site has been deemed eligible. No other eligible architectural resources or archaeological sites were identified within the APE (**Figure 4.4-1**).

Table 4.4-1. Architectural Properties Evaluated at Phase II Level

SHPO Inventory #	Property Name	Address	Date	Recommendation	Reason
Architectural Resources					
SL-VGS-038	Northern Oil Company Filling Station	1126 2nd Avenue South	1919	Not eligible	Lack of integrity of design, workmanship, and materials
SL-VGS-142	Rouchleau Group Mine	W 1/2 Section 9, NW 1/4 Section 16, Township 58N, Range 17W	1893-1977	Not eligible	Lack of integrity as a mining landscape
SL-VGS-145	DM&N Railway Spur Segment	Between 9th and 10th Streets South	1893	Not eligible	Lack of integrity as a rail corridor segment
SL-VGS-148	Staver Foundry	1100 10th Street South	ca. 1920	Not eligible	Lack of integrity of design, workmanship, and materials
SL-VGS-150	Range Paper Company	1321 2nd Avenue South	1921	Not eligible	Lack of historical integrity
SL-VGS-152	South 5th Avenue West Boulevard	South 5th Avenue West between 10th and 13th Streets South	ca. 1914	Eligible^A	Criterion A – for its association with early 20th century public improvement in Virginia
SL-VGS-160	Mine Workers' Neighborhood	Bounded by DM&N, 1st Avenue South, 2nd Avenue South, 12th Street South	ca. 1910-1925	Not eligible	Lack of historic and structural integrity
SL-VGC-pending	Minnewas Mine Lean Ore Stockpile Tailings Basin	SE-NW; SW ¼; NW-SE, Section 16, Township 58N, Range 17W	1949-1955	Not eligible	Lack of significance and integrity

SHPO Inventory #	Property Name	Address	Date	Recommendation	Reason
Archaeological Resources					
21SL1135	Rouchleau Shops	East of 9th and 10th Streets South	ca. 1940-1948	Not eligible	Lack of significance/low information potential
21SL-1208	Minnewas Homestead	Southeast quadrant of Landfill Road at Mesabi Trail	1925-1941	Not eligible	Lack of significance and integrity

^A MnDOT CRU determination of eligibility and SHPO concurrence letters found in [Appendix C](#).

5th Avenue Boulevard Historic Resource, Built in 1914

A three-block segment of 5th Avenue West (formerly Central Avenue) is located within the project's APE. The 5th Avenue segment that is eligible for the NRHP is from 10th to 13th Streets and terminates at a parking lot inside the north boundary of Southside Park ([Figure 4.4-1](#)).

The paved avenue is 50 feet wide with four 10-foot wide islands of varying lengths placed mid-point in the street. Each grass-covered island has a concrete curb. Seven cast-iron light posts of the type that line the rest of the avenue to the north are placed midpoint in each island. Each light post supports five globes set on a cruciform base with other decorative elements.

The present-day view to the south from the foot of the avenue, looking across the park, includes the raised US 53 highway grade (more than 500 feet south of the boulevard), with higher mine stockpiles farther south, and other highway and mine features to the southeast.

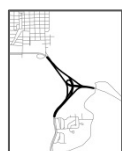
4.4.3 Environmental Consequences

4.4.3.1 No Build Alternative (Easement Agreement Area Closed)



No construction or improvements would occur under the No Build Alternative; therefore, there would be no impacts to the South 5th Avenue West Boulevard site.

4.4.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



No construction would occur under the Existing US 53 Alternative. No impacts to the South 5th Avenue West Boulevard site are anticipated. No other historic resources were identified in this vicinity.

4.4.3.3 Alternative M-1



Improvements to the existing US 53 alignment under Alternative M-1 may be visible from the south end of the South 5th Avenue West Boulevard site. However, the existing and proposed elevations of the roadway in the area visible from the resource would stay the same, resulting in no perceptible visual changes. Additional traffic and an elevation in noise levels are anticipated to occur as a result of the proposed improvements; however, the South 5th

Avenue West Boulevard site is located approximately 900 feet away and approximately 20 feet lower in elevation than the roadway, providing enough separation that indirect noise impacts are not anticipated to be a factor.

MnDOT made a determination of no adverse effect to the South 5th Avenue West Boulevard site, and SHPO concurred (November 20, 2012 SHPO letter in [Appendix C](#)). Given that this resource would not be adversely affected, there would therefore also be no Section 4(f) impact to historic resources.

4.4.3.4 Alternative E-1A



Improvements to the existing US 53 alignment under Alternative E-1A may be visible from the south end of the South 5th Avenue West Boulevard site. However, the existing and proposed elevations of the roadway in the area visible from the resource would stay the same with the Intersection Option, resulting in no perceptible visual changes. No difference would be noticed from this location with the Interchange Option at US 53/MN 135. Additional traffic and an elevation in noise levels are anticipated to occur as a result of the proposed improvements; however, the South 5th Avenue West Boulevard site is located approximately 900 feet away and approximately 20 feet lower in elevation than the roadway, providing enough separation that indirect noise impacts are not anticipated to be a factor.

MnDOT CRU made a determination of no historic properties affected for Alternative E-1A, and SHPO concurred (see [Appendix C](#)). There would therefore also be no Section 4(f) impact to historic resources.

4.4.3.5 Alternative E-2



Improvements proposed under the Alternative E-2 Straight or Curved Setback Options would not be visible or cause other direct or indirect effects upon the South 5th Avenue West Boulevard site. MnDOT CRU made a determination of no historic properties affected for Alternative E-2, and SHPO concurred (see [Appendix C](#)). There would also be no Section 4(f) impact to historic resources.

4.4.4 Avoidance, Minimization, and Mitigation Measures

No impacts to NRHP-eligible resources are proposed for any alternative. Therefore, no avoidance, minimization, or mitigation measures would be necessary.

4.5 Land Use

The land use characteristics within the project area consist of large mining operations, forested land, wetlands, open space, residential areas, and commercial developments. The area is widely known for iron ore mining, and the existing easement agreement area crosses the UTAC open-pit mine, which extends a distance of about five miles between Virginia and Eveleth.

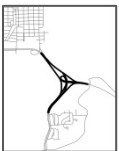
4.5.1 Existing Conditions

4.5.1.1 No Build Alternative (Easement Agreement Area Closed)



Land uses along Co. 7 and MN 37 are primarily characterized by undeveloped and rural residential or commercial properties with direct highway access. The northern portion of the No Build Alternative, along Co. 7 and US 169, includes more dense development within the city of Mountain Iron, including residential, commercial, and institutional land uses. The No Build Alternative passes through the cities of Iron Junction, Mountain Iron, and Virginia. The No Build Alternative is inconsistent with current comprehensive plans for all Quad Cities communities.

4.5.1.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



This portion of US 53, which passes through the operating UTAC Mine, is operated by MnDOT per an easement granted by United States Steel Corporation (now owned by RGGS).

4.5.1.3 Alternative M-1



Alternative M-1 between 2nd Avenue and MN 135 runs through the operating UTAC Mine, in between the Midway commercial and residential neighborhood and a primarily commercial area on the south side of Virginia. Based on known plans, this mining operation will continue to be active for many years. Alternative M-1 mostly follows the grade created by the partially backfilled Auburn Pit. A portion of the Auburn Pit fill accommodates a haul road grade and thus currently functions as a haul route for the mine's large ore trucks. As the corridor proceeds to the northwest and approaches existing US 53, the lands are undeveloped, wooded/natural areas.

4.5.1.4 Alternative E-1A



The eastern portion of Alternative E-1A extends adjacent to the existing US 53 alignment from the Midway neighborhood to the intersection with MN 135. Land uses in the vicinity of the Midway neighborhood are primarily residential and commercial. North of Midway, the E-1A alignment is largely wooded/natural area. The DNR is in the process of developing the Virginia Site of the OHVRA, east of Landfill Road. Current plans for the OHVRA show that the portion of the site closest to the E-1A alignment will not serve as a recreational use area and will remain as it is today. The western portion of the E-1A alignment, including a portion of existing US 53 west of the existing easement agreement area, is characterized by residential and commercial land uses within Virginia.

4.5.1.5 Alternative E-2



For both the Straight and Curved Setback Options, the eastern portion of the alignment extends along and adjacent to the existing US 53 alignment from the Midway neighborhood to the intersection with MN 135. Land uses in the vicinity of the Midway neighborhood are primarily residential and commercial. North of Midway, the E-2 alignment is largely wooded/natural area. The DNR is in the process of developing the Virginia Site of the OHVRA, east of Landfill Road. Current plans for the OHVRA show that the portion of the site closest to the E-2 alignment will not serve as a use area and will remain as it is today. The western portion of the E-2 alignment, including a portion of existing US 53 west of the existing easement agreement area, is characterized by residential and commercial land uses within Virginia.

4.5.2 Land Use Plans

This section discusses local land use plans and land use visioning studies for the areas within the project study area, including any reference to US 53 and/or other transportation corridors affected by project alternatives.

■ Laurentian Vision Partnership Design Charrette Summary (October 2001)

The Laurentian Vision Partnership, a coalition of government agencies and business partners, has studied land use opportunities surrounding Virginia and the current UTAC mine. As mining activity transitions away from the current location over the long-term (when mining and mine operations are no longer present), the Partnership recognizes an opportunity and a need to plan for future use of the mine area. The first Laurentian Vision Partnership charrette addressed the 500+ acre Auburn Pit. This charrette produced design ideas for these topics:

- **Housing and Community Development:** How can the Auburn site provide opportunities for affordable and/or new housing?
- **Economic Development:** How can the Auburn site provide Virginia with space needed to attract new businesses?
- **Environmental Systems:** How can the mine pit be rebuilt to restore water and habitat systems in a way that reshapes the Quad Cities landscape for future development?

Concepts developed during the charrette showed a relocated US 53, aimed at providing “better access into downtown Virginia and to make way for more land.” Concepts for a realigned US 53 were generally in the vicinity of the Auburn Pit or the existing corridor.

■ City of Virginia Comprehensive Plan (December 1997)

Virginia is surrounded on three sides by other cities (Gilbert to the east, Eveleth to the south, and Mountain Iron to the west). The proximity of these communities, and the presence of continuing mining activity within the city's boundaries, means that the amount of land available to develop is drastically limited compared to similarly sized communities that tend to expand on the edges. The city is able to expand into the Midway area; however, there is also pressure to develop existing parklands and wetland areas.

As noted in the City's Comprehensive Plan, "The City has relatively little vacant land available for new residential development that is not comprised by either commercial or industrial uses. This severely limits the City's ability to accommodate move-up housing for existing residents or those who may wish to move to the City of Virginia from elsewhere" (p. 39). The influence of mining activities on the city's ability to develop is evidenced by the fact that of the 5,781 acres that compose Virginia, over 3,200 are owned by mines, and another 1,200 acres are used for public roads.

■ City of Eveleth Comprehensive Plan Update (October 2009)

This comprehensive plan recommends zoning the entire length of US 53 within Eveleth as Highway Commercial, which "would support economic development by providing visible commercial stores to draw in vehicles from US Highway 53" (p. 36).

■ City of Gilbert Comprehensive Plan and Land Use Plan (February 2000)

The City of Gilbert's Plan indicates that MN 37, in particular the intersection of MN 37 and MN 135, is considered a growth area for the city. Specifically, this intersection was cited as a preferred location for industrial land uses, as well as a limit for downtown expansion.

■ City of Mountain Iron Comprehensive Plan (April 2008)

The intersection of US 169 and US 53 is at the heart of Mountain Iron. These two highways "provide residents with connections to neighboring cities and the region at large. They also bring most of the City's visitors and commercial traffic evidenced by the concentration of most commercial activities within the US 169 and US 53 corridors."

■ Minnesota DNR Iron Range Off-Highway Vehicle Recreation Area Master Plan Amendment for the Virginia Expansion) (January 2010)

The DNR is developing a 2,700 acre expansion of the existing OHVRA in the eastern portion of Virginia (see [Figure 4.3-1](#) and [Appendix F](#)). The Virginia site will be developed exclusively for trail riding for all classes of off-highway vehicles (OHVs) and will link to the 1,200 acre Gilbert site. When completed, the Virginia site will include an approximately 75-mile road/trail system. Land acquisition for the site was completed in April 2012. Development of the full road/trail system is anticipated to take three to five years. In the US 53 project area, the designated OHVRA public recreational use area is located only to the east of Landfill Road. Lands adjacent to and west of Landfill Road are owned by the State of Minnesota but have no specific recreational use designation at this time.

4.5.3 Environmental Consequences

This section discusses the compatibility of the project alternatives with the existing land uses and with approved future land use plans for affected areas. Specifically, the consistency of the US 53 alternatives with the development plans identified in adopted, local plans is assessed in this section.

4.5.3.1 No Build Alternative (Easement Agreement Area Closed)



The No Build Alternative would not require use of land outside existing highway rights-of-way. However, this alternative would impact planned land uses within parts of the Quad Cities. As described in Section 4.5.2 above, the communities of Virginia, Gilbert, Eveleth, and Mountain Iron incorporate existing US 53 within their land use plans. Both existing and planned land uses, particularly commercial and industrial land uses, are focused on the US 53 corridor

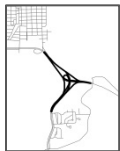
within these communities. The rerouting of US 53, primarily along MN 37, Co. 7, and US 169, would shift this important local connection between Virginia and Eveleth, between Virginia and the city's Midway neighborhood, and between Virginia and Gilbert, to other portions of the Quad Cities.

The No Build Alternative would effectively remove the majority of traffic from the existing easement agreement area, thereby substantially reducing the traffic that passes adjacent to Eveleth, Gilbert, the Midway neighborhood, and the southeast corner of Virginia (see Chapter 3: Transportation Analysis for more detail). Complete rerouting of the segment of US 53 on the existing easement agreement area to MN 37, Co. 7, and US 169 would result in a focus on development away from the existing highway.

Businesses with frontage and access from existing US 53 in Eveleth, the Midway neighborhood, and the southern parts of Virginia would no longer have the exposure to the high traffic volumes with US 53 rerouted to the west. In Eveleth and the Midway neighborhood, the mix of businesses that are destinations and those that rely on drive-by traffic is fairly evenly split. In the southwest part of Virginia, there are many businesses such as fast food, big box retail, grocery, and gas stations, which rely more on drive-by traffic. For the No Build Alternative, the significant traffic volume decrease along US 53 cannot be avoided due to the traffic pattern changes. Signage for local businesses could alleviate some impact by directing more traffic to specific businesses; however, due to the severity of the traffic change, there is little that can be done to increase traffic volumes near the remnant segments of US 53.

Highways that would comprise the No Build Alternative are now primarily characterized by natural, undeveloped, and residential or commercial properties. The addition of roughly 15,000 to 20,000 vehicles per day over portions of the No Build reroute corridors may result in development pressure that could result in intensified land uses that are more commonly found along major arterial highways.

4.5.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



Maintaining the existing US 53 alignment would not result in any land use impacts and is therefore consistent with the local land use plans.

4.5.3.3 Alternative M-1



This alternative would introduce a highway corridor into an area that has been or is undergoing mining activity. The land that is required for this alternative is almost entirely owned by RGGS. Given that UTAC plans to continue mining operations on either side of this alignment, little, if any, change is anticipated to occur within the foreseeable future as a result of Alternative M-1 construction. The charrette completed by the Laurentian Vision Partnership in 2001 did include concepts that would realign US 53 in close proximity to the M-1 alignment; however, these concepts have not been adopted by agencies with land use planning authority. These community vision concepts may guide land use planning efforts in the vicinity of the M-1 alignment once mining activities in this area have ceased, which is not anticipated to occur for several decades from the present.

Alternative M-1 is not expected to cause significant change in land use within the vicinity of the limits of construction. It is not anticipated to lead to the development of any large scale commercial, industrial, residential, or other development. Local access would be modified with minor changes at 2nd Avenue and MN 135 (see Chapter 2: Alternatives). The project is consistent with local and/or regional comprehensive plans.

4.5.3.4 Alternative E-1A



Alternative E-1A would introduce a new transportation corridor in the area northeast and southeast of the existing US 53/MN 135 interchange and through the Rouchleau Pit. In the area northeast of the US 53/MN 135 interchange, the land uses surrounding the E-1A alignment and existing Landfill Road would not change as this land is owned by the State of Minnesota, is part of the OHVRA, and under management by the DNR. Additionally, the

presence of the Rouchleau Pit and surrounding mineral resources anticipated to be mined in the future generally limit development potential around this portion of the E-1A alignment. The area west of the Rouchleau Pit and east of 2nd Avenue would be subject to right-of-way acquisition necessary to accommodate the new highway. As described in Section 4.1, three total parcel acquisitions are anticipated in this area. The potential for other land use changes in the 2nd Avenue area is limited, as access would be retained with limited impacts to existing conditions for surrounding properties.

Alternative E-1A is not expected to cause noticeable change in land use within the study area. It is not anticipated to lead to the development of any large scale commercial, industrial, residential, or other development. The project is consistent with local and/or regional comprehensive plans.

4.5.3.5 Alternative E-2



Under both the Straight and Curved Setback Options, Alternative E-2 would introduce a new transportation corridor in the area near the existing US 53/MN 135 interchange and through the Rouchleau Pit. In the area northeast of the US 53/MN 135 interchange, the land uses surrounding the E-2 alignment and existing Landfill Road would not change as this land is owned by the State of Minnesota, is part of the OHVRA, and under management by the DNR.

Additionally, the presence of the Rouchleau Pit and surrounding mineral resources anticipated to be mined in the future generally limit development potential around this portion of the E-2 alignment. The area west of the Rouchleau Pit and east of 2nd Avenue would be subject to right-of-way acquisition necessary to accommodate the new highway. As described in Section 4.1, two total parcel acquisitions are anticipated in this area. The potential for other land use changes in the 2nd Avenue area is limited, as access would be retained with limited impacts to existing conditions for surrounding properties.

Alternative E-2 is not expected to cause noticeable change in land use within the study area. It is not anticipated to lead to the development of any large scale commercial, industrial, residential, or other development. The project is consistent with local and/or regional comprehensive plans.

4.5.4 Avoidance, Minimization, and Mitigation Measures

No mitigation is necessary.

4.6 Environmental Justice

4.6.1 Regulatory Context and Methodology

4.6.1.1 Regulatory Context

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” was issued in February 1994. The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority and low-income populations. The proposed project has federal permit requirements and will receive federal funding. As such, it is considered a federal project for the purpose of compliance with this executive order.

Executive Order 12898 requires that the proposed actions be reviewed to determine if there are “disproportionately” high or adverse impacts on these populations. “Disproportionate” is defined in two ways: the impact is “predominantly borne” by the minority or low-income population group, or the impact is “more severe” than that experienced by non-minority or non-low-income populations.

FHWA Order 6640.23a, “FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” establishes policies and procedures for FHWA to use in complying with the executive order.

4.6.1.2 Methodology

The steps for defining environmental justice impacts include the following:

- Identification of the location of any low-income population and/or minority population(s) in the study area
- Identification of the impacts of the project upon the identified potential low-income population and/or minority population
- Determination of whether or not the impacts are disproportionately high or adverse

Land use along the US 53 corridor is predominantly mining land except for development in the cities of Virginia and Eveleth. To gain a better understanding of the demographic composition of the study area, the 2010 Census was reviewed at the census tract and block group level for year 2010 population and racial/ethnic data. The 2008-2012 American Community Survey (ACS) was reviewed at the block group level for household income and size data.

According to Executive Order 12898 and the FHWA order on environmental justice, environmental justice populations are defined as *“any readily identifiable groups of minority persons or low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.”* According to further FHWA direction on conducting environmental justice analysis,²² a minority community is generally defined as one where the minority population is either 10 percentage points higher than the county average; or greater than 50 percent of the total geographic unit; or determined based on input from local officials or stakeholders. St. Louis County has a minority percentage of seven percent, so any block groups higher than 17 percent minority within the study area would be initially identified as containing a minority community and investigated further using local government staff knowledge and other data sources.

The FHWA order also defines low-income persons, but there are no specific thresholds for low-income “communities.” The effort to identify groups or clusters of low-income persons (i.e., living in geographic proximity) included review of the best available household income data (adjusted to 2014 dollars) and average household size (from the 2008-2012 ACS as noted above) compared to the US Department of Health & Human Services (HHS) 2014 Poverty Guidelines, an inventory search of affordable housing types including public housing and manufactured home parks, discussion with City management staff familiar with neighborhood makeup in the project area, and public outreach.

For purposes of this analysis, the study area was defined as any block group within 200 feet of the alternatives under evaluation. Many of the block groups include existing or past mining areas and are quite large. Review of aerial photography helped to identify where single-family residences, apartment buildings, and manufactured home parks were located. Coordination with the City of Virginia also took place to identify locations of designated low-income housing or areas known to be occupied by communities of specific ethnic groups.

4.6.2 Existing Conditions

The first step in the environmental justice determination process was to determine whether any minority and/or low-income populations are present within the study area.

4.6.2.1 Minority Populations

The study area encompasses 14 block groups within five census tracts (**Figure 4.6-1**). **Table 4.6-1** summarizes the number of households, total population, and percentage of white and minority persons within the block groups in the study area. None of the 14 block groups in the study area are 10

²² Webinar Series on Environmental Justice: Guidance for Conducting Community Impact Assessments, December 6, 2012, FHWA Office of Human Environment.

percentage points or more over the county average for minority populations. Field review and initial discussions with City management staff familiar with neighborhood makeup in the project area did not provide any additional information on the potential for the presence of a minority population adjacent to the project study area.

4.6.2.2 Low-Income Populations

Table 4.6-2 provides the household income and size data that was used to determine if any of the 14 block groups in the project area (shown in **Figure 4.6-1**) met the definition of low income (based on the methodology described in Section 4.6.1.2). None of the block groups were found to have median household incomes below the HHS 2014 poverty guidelines; therefore, no block groups were identified as low income.

Coordination with City management staff familiar with neighborhood makeup in the project area, review of aerial photography, and a street-level windshield review of the housing in the project area did not indicate any apparent clustering of low-income areas within these block groups.

There are two manufactured home parks located in the study area, both along the No Build Alternative corridor. Briarwood Estates Manufactured Home Park is located along Co. 7, south and west of Virginia. Iron Bowl Manufactured Home Park is located further south along Co. 7, about two miles north of Iron Junction (see **Figure 4.6-1**). Based on the housing type and field investigation, these manufactured home parks have been determined to be locations of low-income populations for the purposes of this environmental justice analysis.

A search of affordable/low-rent housing in the US Department of Housing and Urban Development Database²³ revealed three locations within Virginia. None of these locations are in proximity to the proposed alignments. The database indicated one location in Eveleth, which is located along Co. 7/Co. 101 through Eveleth, adjacent to rerouting options for the No Build Alternative (see **Figure 4.6-1**). The City of Virginia provided a list of an additional 10 low-income housing complexes in Virginia, Eveleth, and Gilbert, none of which are in proximity to the proposed alignments.

4.6.2.3 Outreach

Outreach efforts were made during the preparation of this Draft EIS to contact and engage the public, including minority and low-income populations. For the public information meeting held in November 2012, a concerted effort was made to provide notice to environmental justice populations. Meeting flyers were distributed in the Manney Shopper, a free newspaper with wide distribution in the project area. Flyers were also dropped off at local convenience stores along 2nd Avenue in Virginia, an area adjacent to the project.

²³ Low-rent apartment search available at <http://www.hud.gov/apps/section8/index.cfm> (Accessed January 8, 2013)

Table 4.6-1. Summary of Minority Populations in the Study Area

Demographic Group	Census Tract 128						Census Tract 131		Census Tract 132				Census Tract 133										Census Tract 134						St. Louis County	
	Block Group 1		Block Group 2		Block Group 3		Block Group 1		Block Group 1		Block Group 2		Block Group 1		Block Group 2		Block Group 3		Block Group 4		Block Group 5		Block Group 1		Block Group 2		Block Group 3			
	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop	#	% of Pop
Households	333	N/A	319	N/A	445	N/A	375	N/A	571	N/A	419	N/A	257	N/A	444	N/A	433	N/A	474	N/A	266	N/A	303	N/A	393	N/A	290	N/A	84,783	N/A
Population	614	100%	714	100%	1033	100%	776	100%	1,166	100%	913	100%	581	100%	823	100%	745	100%	933	100%	636	100%	726	100%	890	100%	569	100%	200,226	100%
White	588	96%	691	97%	1002	97%	660	85%	1,139	97%	888	97%	540	93%	789	96%	698	94%	893	96%	612	96%	698	96%	865	97%	557	98%	186,212	93%
Minorities	26	4%	23	3%	31	3%	116	15%	27	2%	25	2%	41	7%	34	4%	47	6%	40	4%	24	3%	28	4%	25	3%	12	2%	14,014	7%
Black	5	1%	0	0%	3	0%	5	<1%	7	<1%	0	0%	4	1%	6	1%	4	1%	4	<1%	1	<1%	7	1%	6	1%	0	0%	2,739	1%
American Indian and Alaska Native	5	1%	8	1%	6	1%	68	9%	1	<1%	14	1%	18	3%	4	<1%	27	4%	14	2%	3	<1%	3	<1%	6	1%	6	1%	4,477	2%
Asian	3	0%	1	0%	3	0%	3	<1%	1	<1%	2	<1%	0	0%	5	1%	2	<1%	3	<1%	2	<1%	3	<1%	1	0%	2	<1%	1,774	<1%
Native Hawaiian and Other Pacific Islander	0	0%	0	0%	0	0%	2	<1%	0	0%	0	0%	0	0%	0	0%	0	0%	1	<1%	0	0%	0	0%	3	0%	0	0%	64	<1%
Other Race	0	0%	0	0%	0	0%	1	<1%	2	<1%	1	<1%	0	0%	4	<1%	0	0%	0	0%	1	<1%	1	<1%	1	0%	0	0%	445	<1%
Hispanic or Latino Origin	9	1%	7	1%	0	0%	10	1%	8	<1%	6	<1%	9	2%	16	2%	1	0%	4	<1%	3	<1%	3	<1%	9	1%	0	0%	2,409	1%
Two or More Races	13	2%	14	2%	19	2%	37	5%	16	1%	8	<1%	19	3%	15	2%	14	2%	18	2%	17	3%	14	2%	8	1%	4	<1%	4,515	2%

Source: US 2010 Census Data

Table 4.6-2. Summary of Low-Income Populations in the Study Area

Demographic Group	Census Tract 128			Census Tract 131	Census Tract 132		Census Tract 133					Census Tract 134		
	<i>Block Group 1</i>	<i>Block Group 2</i>	<i>Block Group 3</i>	<i>Block Group 1</i>	<i>Block Group 1</i>	<i>Block Group 2</i>	<i>Block Group 1</i>	<i>Block Group 2</i>	<i>Block Group 3</i>	<i>Block Group 4</i>	<i>Block Group 5</i>	<i>Block Group 1</i>	<i>Block Group 2</i>	<i>Block Group 3</i>
Median Household Income ¹	\$22,622	\$61,273	\$39,934	\$40,268	\$38,014	\$43,397	\$30,687	\$35,678	\$24,859	\$40,132	\$52,192	\$58,851	\$52,677	\$69,876
Average Household Size	1.43	2.23	2.12	2.40	2.01	2.41	2.15	1.90	2.23	1.90	2.67	2.33	2.27	2.26
2014 HHS Poverty Guideline for Corresponding Household Size	\$11,670	\$15,730	\$15,730	\$15,730	\$15,730	\$15,730	\$15,730	\$15,730	\$15,730	\$15,730	\$19,790	\$15,730	\$15,730	\$15,730
Below HHS Poverty Guidelines?	No	No	No	No	No	No	No	No	No	No	No	No	No	No

¹ In 2014 inflation-adjusted dollars
Source: 2008-2012 American Community Survey Data

4.6.3 Environmental Consequences

Issues that were considered when evaluating the potential for environmental justice population impacts included potential for direct impacts (i.e., right-of-way acquisition and community cohesion) and potential indirect/proximity impacts (i.e., change in access to the transportation system and/or travel time, noise). Mitigation of impacts and offsetting benefits are also considered as part of the environmental justice analysis. Each of the potential impacts and mitigation for those impacts is discussed by alternative below. The determination of whether any adverse impacts, after mitigation, would be “disproportionately borne” by environmental justice populations is presented in Section 4.6.3.6.

4.6.3.1 No Build Alternative (Easement Agreement Area Closed)



The No Build Alternative would close the existing easement agreement area of US 53 on the south side of downtown Virginia and near the Midway area. As a result of these closures, traffic would be diverted to existing highways to the south and west, including MN 37, Co. 7, and US 169. The area adjacent to Co. 7 is home to the Briarwood Estates Manufactured Home Park and the Iron Bowl Manufactured Home Park, which are being considered areas of low-income populations for purposes of this analysis. Adjacent to Co. 101 through Eveleth, which is not part of the official No Build reroute, specific low-income housing is identified on McKinley Avenue. By 2024, if UTAC closes Co. 101 west of Eveleth to through traffic, populations on Co. 101 would experience a substantial drop in traffic volumes after 2024.

Transportation Access/Travel Time Changes

The No Build Alternative would remove direct highway access to all users, including environmental justice populations along Co. 7 and in Eveleth, but would still provide local connections. Access and travel times between communities would also be affected, as documented in Chapter 3: Transportation Analysis and Section 4.7. These changes in access and travel times would affect all residents in the vicinity of the existing US 53 corridor, not just environmental justice populations.

Community Cohesion

The No Build Alternative does not bisect or otherwise divide identified environmental justice communities.

Right-of-Way

No new right-of-way acquisition is necessary to implement the No Build Alternative and, therefore, would not impact environmental justice populations. There would be a change in access, which would affect all residents in vicinity of the road closure.

Noise

Noise would be reduced near the vacated areas of US 53. With increased traffic levels along the proposed reroute, sensitive receptor locations along Co.7, MN 37, and Co. 101 would experience significant (greater than five dBA) noise level increases due to the increase in traffic volumes during both daytime and nighttime hours (up to year 2024) and would drop off if UTAC closes Co. 101 to through traffic. This includes the two manufactured home parks along Co. 7 and low-income housing along Co. 101 through Eveleth. The additional traffic volumes would cause Minnesota noise standards to be exceeded at locations along each of these existing roadways. However, impacts would not be borne primarily by environmental justice populations, but all residents along the reroute would experience increased noise levels.

Mitigation for noise impacts could include use of noise barriers in areas where feasible and reasonable, and benefited receptors (homes or other land uses sensitive to noise) would vote on the noise barrier, including those owned or rented by environmental justice residents (see Section 5.7 for a summary of the noise abatement determination process). Construction noise would be mitigated by standard MnDOT mitigation practices.

4.6.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



Under this alternative, US 53 would remain in place and open to traffic. There would be no change in the current environment, which includes environmental justice and non-environmental justice populations in the project area.

4.6.3.3 Alternative M-1



Alternative M-1 is located in Census Tract 132, a majority of which is located within mining and undeveloped areas. The northern part of the alignment parallels existing US 53 in Virginia (north of the Auburn Pit) and the Ridgewood neighborhood. No environmental justice populations were identified proximate to this alternative.

Transportation Access/Travel Time Changes

There are no anticipated impacts to environmental justice populations as a result of Alternative M-1. All residents in the Ridgewood neighborhood, which is adjacent to this alternative and does not have an identified low-income or minority population, may experience a slight decrease in travel times due to shorter road distance, improving connectivity to points south. Therefore, slight benefit to both environmental justice populations and non-environmental justice populations would occur.

Community Cohesion

Alternative M-1 would not directly bisect or otherwise divide identified environmental justice communities.

Right-of-Way

No relocations would result from this alternative. The majority of new right-of-way is mining land or undeveloped and would not directly impact environmental justice populations or non-environmental justice populations.

Noise

Noise levels in the Ridgewood and Midway areas (Areas D, E, and F from Section 5.7) are expected to exceed noise standards at nearby residential receptors. No identified environmental justice populations are present in these areas.

Mitigation for noise impacts could include use of noise barriers in areas where feasible and reasonable (i.e., Area F), and benefited receptors (homes or other land uses sensitive to noise) would vote on the noise barrier, including those owned or rented by environmental justice residents (see Section 5.7 for a summary of the noise abatement determination process). Construction noise would be mitigated by standard MnDOT mitigation practices.

4.6.3.4 Alternative E-1A



A majority of Alternative E-1A is located in Census Tract 132, a majority of which is located within mining and undeveloped areas. The alignment does approach the eastern edge of the city of Virginia; however, there are no identified concentrations of low-income and/or minority populations located along the proposed alignment, and, according to City management staff familiar with neighborhood makeup in the project area, the area adjacent to the alignment is made up of both environmental justice and non-environmental justice residents.

There are no differences in impacts between the Intersection and Interchange Options or the RSS and Bridge Options.

Transportation Access/Travel Time Changes

There would be longer travel times (two to three minutes) to points south under Alternative E-1A. Both environmental justice and non-environmental justice residents in this neighborhood would be subject to this increase.

Community Cohesion

Alternative E-1A travels along the edge of the city of Virginia and would not directly bisect or otherwise divide identified environmental justice communities.

Right-of-Way

This alternative would result in the removal of up to two commercial parcels, one located at the northwest corner of US 53/2nd Avenue and one located south of MN 135 along Bourgin Road. These businesses are not essential contributors to the identity and/or cohesion of an environmental justice community. The owners will be compensated according to the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970.

Noise

With the new roadway alignment and increased traffic levels, noise levels are expected to exceed state standards at all residences within Block Group 131-1 that are located directly adjacent to the new highway alignment, as well as one block away (Area C from Section 5.7) and in the Midway neighborhood (Areas F and G from Section 5.7). No environmental justice populations were identified proximate to this alternative.

Mitigation for noise impacts could include use of noise barriers in areas where feasible and reasonable (i.e., Area F), and benefited receptors (homes or other land uses sensitive to noise) would vote on the noise barrier, including those owned or rented by environmental justice residents (see Section 5.7 for a summary of the noise abatement determination process). Construction noise would be mitigated by standard MnDOT mitigation practices.

4.6.3.5 Alternative E-2



A majority of Alternative E-2 is located in Census Tract 132, a majority of which is located within mining and undeveloped areas. The alignment does approach the eastern edge of the city of Virginia; however, there are no identified concentrations of low-income and/or minority populations located along the proposed alignment, and, according to City management staff familiar with neighborhood makeup in the project area, the area adjacent to the alignment is made up of both environmental justice and non-environmental justice residents.

There are no differences in impacts between the Intersection and Interchange Options or the Straight and Curved Setback Options.

Transportation Access/Travel Time Changes

Both environmental justice and non-environmental justice residents in the neighborhoods adjacent to the alignment may be subject to longer travel times (one to two minutes) to points south with the implementation of Alternative E-2.

Community Cohesion

Alternative E-2 travels along the edge of the city of Virginia and would not directly bisect or otherwise divide identified environmental justice communities.

Right-of-Way

This alternative would result in the removal of one commercial parcel located at the northwest corner of US 53/2nd Avenue. This business is not an essential contributor to the identity and/or cohesion of an environmental justice community. The owner will be compensated according to the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970.

Noise

With the new roadway alignment and increased traffic levels, noise levels are expected to exceed state standards at all residences within Block Group 131-1 (Area C from Section 5.7) that are located directly adjacent to the new highway alignment, as well as one block away for both the Straight and Curved Setback Options. With the Curved Setback Option, the Midway neighborhood (Areas F and G from Section

5.7) would also exceed state standards. No environmental justice populations were identified proximate to this alternative.

Mitigation for noise impacts could include use of noise barriers in areas where feasible and reasonable (i.e., Area C and, with the Curved Setback Option, Area F), and benefited receptors (homes or other land uses sensitive to noise) would vote on the noise barrier, including those owned or rented by environmental justice residents (see Section 5.7 for a summary of the noise abatement determination process). Construction noise would be mitigated by standard MnDOT mitigation practices.

4.6.3.6 Determination of Disproportionately High or Adverse Impacts

If any adverse impacts remain after mitigation is considered, then a determination must be made whether those effects are disproportionately high and adverse with respect to minority and/or low-income populations. After considering mitigation, remaining adverse impacts would include:

- No Build Alternative: substantial access, travel time, and noise impacts
- Alternative M-1: unmitigated noise impacts at Areas D and E
- Alternative E-1A: unmitigated noise impacts at Areas C and G
- Alternative E-2 Curved Setback Option: unmitigated noise impacts at Area G

“Disproportionate” is defined in two ways: the impact is “predominantly borne” by the minority or low-income population group, or the impact is “more severe” than that experienced by non-minority or non-low-income populations.

Impacts related to access and travel times would be borne by both environmental justice populations and non-environmental justice populations. Travel time impacts are not disproportionate to environmental justice populations for any of the alternatives.

None of the Build Alternatives require substantial residence or business acquisitions. No environmental justice populations would be directly affected by property acquisition or physical division of or barriers to defined communities. Right-of-way impacts are not disproportionate to environmental justice populations, and no community cohesion impacts are anticipated.

Environmental justice populations were identified only adjacent to the No Build Alternative. Residents and businesses that may be affected by traffic noise are located along the entire No Build Alternative. Specific noise mitigation was not evaluated for the No Build Alternative; therefore, it is unknown which areas would continue to be impacted after mitigation. If noise impacts remained adverse after mitigation, those impacts would not be disproportionately borne by environmental justice populations as the entire corridor would experience similar impacts.

4.6.3.7 Environmental Justice Finding

Based on the available data, low-income populations were identified in the study area along the No Build Alternative; however, none were identified within the potential impact area of the Build Alternatives. Residents of the manufactured home parks located along the No Build Alternative would be impacted by the project if it were selected as the preferred alternative, but no disproportionately high and adverse impacts are anticipated.

4.6.4 Avoidance, Minimization, and Mitigation Measures

There would be no disproportionately high or adverse effects to environmental justice populations due to this project; therefore, no mitigation is required.

4.7 Social, Neighborhood, and Community Facility Impacts

4.7.1 Regulatory Context and Methodology

Connectivity between the five area communities and associated community facilities and services was evaluated to determine if any alternatives would impact functionality, connectivity, and/or emergency response times.

4.7.2 Existing Conditions

The St. Louis County communities within the project area include the Quad Cities of Virginia, Eveleth, Gilbert, and Mountain Iron, plus Leonidas. Public resources in these cities include schools, libraries, parks, recreational areas, police and fire stations, and medical facilities (**Figure 4.7-1**).

4.7.2.1 Virginia

There are two notable neighborhoods that are part of Virginia but have some separation from the main center of Virginia by US 53: the Ridgewood neighborhood south of US 53 and west of the Auburn Pit; and the Midway neighborhood east of the Auburn Pit. These neighborhoods are directly connected to the city center by the existing easement agreement area. The area of Virginia north of US 53 is referred to here as downtown Virginia as it encompasses the bulk of the city and the historic city center.

Schools and Libraries

Independent School District (ISD) 706 serves the city of Virginia. The three schools that are part of ISD 706 include Roosevelt Elementary School, Virginia High School, and Parkview Learning Center. Other schools located within the city limits of Virginia include Mesabi Range Community and Technical School, East Range Academy of Technology and Science, and East Range Secondary Technical Center. All schools and learning centers are located within the downtown area of the city, except the East Range Academy of Technology and Science which is located near the Midway neighborhood.

The Virginia Public Library is located north of the high school.

Parks and Recreational Areas

Five parks and recreational facilities are located within the city limits of Virginia. All of these features are located north of US 53. The Virginia Municipal Golf Course is located on the north side of the downtown area and the parks are scattered throughout.

Emergency Services and Medical Facilities

The Virginia Police Department and Fire Department are both located near the downtown area of the city. The paramedics at the Virginia Fire Department have five advanced life support ambulances that serve a 650 square mile area.²⁴ This fire department assists the communities of Gilbert, Leonidas, and Mountain Iron. Virginia is also home to Essentia Health-Virginia, the main trauma center and hospital within the region. Essentia Health-Virginia is located on 9th Street on the north side of Virginia.

4.7.2.2 Eveleth

Schools and Libraries

ISD 2154, which includes four schools, serves the cities of Eveleth, Gilbert, and Leonidas. Two of the four schools, Franklin Elementary and Eveleth-Gilbert High School, are located in Eveleth, as is the Mesabi Range Community and Technical School.

Eveleth has a public library that is located north of Franklin Elementary School.

²⁴ City of Virginia's website: http://www.virginiamn.us/departments/fire_department/index.php (accessed August 28, 2014)

Parks and Recreational Areas

Eveleth has three parks: Northside Park, Monroe Park, and Southside Park. The city also houses the Range Recreation Civic Center and the Eveleth Hippodrome.

Emergency Services and Medical Facilities

The police force, volunteer fire department, and paid-on-call ambulance service²⁵ are housed near downtown Eveleth. No major medical facilities exist within the city limits.

4.7.2.3 Gilbert

Schools and Libraries

The city of Gilbert has two schools: Nelle Shean Elementary and Eveleth-Gilbert Junior High. Both schools are part of ISD 2154. As noted above, this district includes a total of four schools and serves the cities of Eveleth, Gilbert, and Leonidas.

The Gilbert Public Library is located in the northern part of the city.

Parks and Recreational Areas

One park and one recreational area are located within Gilbert. These include Hopkins Park and the Gilbert Unit of the OHVRA.

Emergency Services and Medical Facilities

Gilbert has a police force and a fire department located in the northern area of the city. The City of Virginia's medical response team services Gilbert and Virginia concurrently. No major medical facilities exist within the city.

4.7.2.4 Mountain Iron

Schools and Libraries

ISD 712 serves the cities of Mountain Iron, Buhl, and Kinney. Two of the district's three schools are located in Mountain Iron: Mountain Iron-Buhl High School and Merritt Elementary School.

The city's public library is located downtown.

Parks and Recreational Areas

Ten parks are scattered throughout Mountain Iron.

Emergency Services and Medical Facilities

Mountain Iron does not have a police or fire department. The St. Louis County Sheriff's department provides law enforcement services for the city, and the City of Virginia's fire department and emergency response teams cover Mountain Iron.

4.7.2.5 Leonidas

Schools and Libraries

ISD 2154 serves the city of Leonidas. No schools are located within the city limits; the city is served by schools in Eveleth and Gilbert.

Parks and Recreational Areas

One recreational facility, the Leonidas Community Center, is located in Leonidas.

Emergency Services and Medical Facilities

Leonidas does not have a police or fire department. These services are provided by the City of Eveleth's police and fire departments.

²⁵ City of Eveleth's website: http://www.evelethmn.com/index.asp?Type=B_BASIC&SEC=%7B33D49EAA-4795-4C82-B42E-6617CAC436BB%7D

4.7.3 Environmental Consequences

Anticipated impacts of the various alternatives are discussed below and summarized in **Table 4.7-1**. Because the impacts of the Build Alternatives and their respective options do not present distinguishable differences regarding social impacts, they are combined for purposes of this discussion. Additional information on travel times between the communities can be found in Section 3.1.

Table 4.7-1. Impacts to Social, Neighborhood, and Community Facilities By Alternative

Cities	Alternatives		
	No Build	Existing US 53	Build Alternatives (M-1, E-1A, and E-2)
Virginia	Removal of direct connection between Midway and downtown Virginia	No impact	Similar connection between the city's downtown area and the Midway area and other surrounding communities
	School buses rerouted through Eveleth, Leonidas, and Mountain Iron, greatly increasing trip length		ISD 706 bus routes modified to accommodate the different connection point between the two sections of US 53, but overall no major connectivity issues anticipated
	Emergency response times lengthened 9 to 21 minutes depending on destination		Change in emergency response between Virginia downtown and Ridgewood sections to Midway and the surrounding communities would be minimal (less than 3 minutes)
	Time needed to get from the downtown and Ridgewood sections of Virginia to Gilbert, Eveleth, and Leonidas would be lengthened 6.5 to 21 minutes depending on destination		Access improvement at 2nd Avenue would provide a better access for emergency response to transport from the Midway area to Essentia Health-Virginia; compared to the existing travel time, the trip would take an additional 3.5 minutes or less
Eveleth, Gilbert	Removal of direct connection to Virginia's downtown area	No impact	Similar direct connection to Virginia's downtown and Ridgewood areas
	No impact to bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas		No impact to bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas
	Increased travel time of fire and emergency response to Essentia Health-Virginia and the city of Virginia (9 to 21 minutes)		Access improvement at 2nd Avenue would maintain access for emergency response/transport to Essentia Health-Virginia
Mountain Iron	Impacts connection between Mountain Iron (US 169) and the Midway area of Virginia with travel time increases similar to those for Eveleth and Virginia	No impact	Connection between the US 169 area of Mountain Iron and the Midway area of Virginia would increase travel time by 3 minutes or less
	No impact to bus movements for ISD 712 between Mountain Iron, Buhl, and Kinney		No impact to bus movements for ISD 712 between Mountain Iron, Buhl, and Kinney
	No impact to movement of fire and emergency response between the Virginia and Mountain Iron		No impact on fire and emergency response between the Virginia and Mountain Iron

Cities	Alternatives		
	No Build	Existing US 53	Build Alternatives (M-1, E-1A, and E-2)
Leonidas	Result in route change between Leonidas and Virginia (increased travel time and distance) with travel time increases similar to those for Eveleth and Virginia	No impact	Provides similar connection to downtown and Ridgewood Virginia, with small increase (3 minutes or less) in travel time
	No impact to ISD 2154 bus movements between Eveleth and Leonidas		No impact to bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas
	Emergency response travel time between Leonidas and Essentia Health-Virginia may increase due to congestion		Access improvement at 2nd Avenue would maintain access for emergency response/transport to Essentia Health-Virginia

4.7.3.1 No Build Alternative (Easement Agreement Area Closed)



Virginia

The No Build Alternative would remove the direct connection between the Midway neighborhood and Virginia's downtown and Ridgewood areas. This would result in a longer trip between Midway and downtown Virginia because drivers would need to travel around the mining operations along the designated routes. Even local "cut-through" routes on Co. 101 through Eveleth would take longer and were assumed to be eliminated by 2024 if UTAC closes Co. 101. ISD 706 busing would also be rerouted through different school districts in Eveleth, Leonidas, and Mountain Iron in order to transport students between downtown Virginia and the Midway area. Connections between the recreational areas and the parks would be hindered and longer commutes would be needed to provide access to these facilities between Virginia and the Midway area. Movements of police, fire, and emergency response would be hindered due to the loss of direct connectivity between these sections of Virginia.

Eveleth

The No Build Alternative would remove the direct connection between Eveleth and Virginia. This alternative would not impact the bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas. The No Build Alternative would increase travel time of emergency response between Eveleth and Essentia Health-Virginia.

Gilbert

The No Build Alternative would remove the direct connection between Gilbert and Virginia's downtown area. This alternative would not impact the bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas but would increase travel time of emergency response between Gilbert and Virginia.

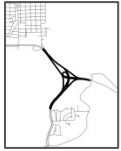
Mountain Iron

The No Build Alternative would impact the connection between Mountain Iron (US 169 area) and the Midway area of Virginia. This alternative would not impact the bus movements for ISD 712 between Mountain Iron, Buhl, and Kinney. It also would not impact the movement of fire and emergency response between the Virginia and Mountain Iron, as the fire and emergency response stations are located within Virginia, north of US 53.

Leonidas

The No Build Alternative would remove the direct connection between Leonidas and Virginia. This alternative would not impact the bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas. The alternative would impact the movement of emergency response between Leonidas and Essentia Health-Virginia.

4.7.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



The Existing US 53 Alternative would not impact the connectivity of any neighborhood or community facilities within Virginia, Eveleth, Gilbert, Mountain Iron, or Leonidas.

4.7.3.3 Build Alternatives (M-1, E-1A, and E-2)



Virginia

The Build Alternatives and their respective options would provide a connection similar to the existing one between the downtown/Ridgewood areas and the Midway neighborhood. The intersection at 2nd Avenue would be modified to an at-grade, full access intersection (for Alternative M-1 access to 2nd Avenue is provided via the new Southern Drive intersection). ISD 706 bus routes would be modified to accommodate the different connection point between the two sections of US 53, but, overall, no major connectivity issues are anticipated. The change in fire and police response to the Midway section of the city would be minimal due to the location of the alternatives in relation to the existing US 53 alignment. The full access improvements at 2nd Avenue and the location of the northern connection to existing US 53 would maintain access for emergency response to transport from the Midway neighborhood to Essentia Health-Virginia.

Eveleth

The Build Alternatives and their respective options would not change the direct connection between Eveleth and Virginia's downtown/Ridgewood areas. These alternatives would not impact the bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas. The full access improvements at 2nd Avenue and the location of the connection to existing US 53 would maintain access for emergency response to transport from Eveleth to Essentia Health-Virginia.

Gilbert

The Build Alternatives and their respective options would not change the direct connection between Gilbert and Virginia's downtown/Ridgewood areas. These alternatives would not impact the bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas. The full access improvements at 2nd Avenue and the location of the connection to existing US 53 would provide better access for emergency response to transport from Gilbert to Essentia Health-Virginia.

Mountain Iron

The Build Alternatives and their respective options would not impact the connection between the US 169 area of Mountain Iron and the Midway neighborhood of Virginia. These alternatives would not impact the bus movements for ISD 712 between Mountain Iron, Buhl, and Kinney. These alternatives would not impact the movement of fire and emergency response between Virginia and Mountain Iron, as the fire and emergency response stations are located within the downtown area of Virginia.

Leonidas

Alternatives would not remove the direct connection between Leonidas and Virginia's downtown area. Alternatives would not impact the bus movements for ISD 2154 between Eveleth, Gilbert, and Leonidas. The change at 2nd Avenue and the location of connecting the existing US 53 in the downtown area would provide better access for emergency response to transport from Leonidas to Essentia Health-Virginia.

4.7.4 Avoidance, Minimization, and Mitigation Measures

4.7.4.1 Avoidance and Minimization

The alternative expected to have the greatest impact to community facilities and social or neighborhood connectivity is the No Build Alternative. However, since the impact is due to the length of the reroute, there are limited or no potential avoidance, minimization, or mitigation strategies available. The

remaining alternatives would have little to no impact on community facilities or social or neighborhood connectivity. Appropriate signage would be added for any alternative chosen. New bus routes would be determined for the three different school districts and the fire, police, and emergency response routes would be modified for the different communities and their connections to Essentia Health-Virginia.

4.7.4.2 Mitigation Measures

No further mitigation is required.

4.8 Visual and Aesthetic Impacts

4.8.1 Regulatory Context and Methodology

The visual quality analysis is based on the MnDOT Visual Impact Assessment framework which considers the project location, visual resources, and user groups to assess the level of visual quality impacts and need for mitigation.

The assessment of visual quality impacts was based on the identification of visual resources, or the objects which compose the project environment. Visual resources are potentially affected if they can be seen from the proposed highway or if the proposed highway would be seen from them. Visual resources were identified in three categories: natural environment, cultural environment, and highway environment. Potential impacts to these resources were then identified according to viewers: those who are neighbors, or occupants of lands adjacent to the project; and those who are travelers, or users of the proposed project.

4.8.2 Existing Conditions

The description of the affected environment for each alternative considered natural, cultural, and highway environments. The dominant features in the study area within each of these categories are summarized below, followed by a discussion of resources by alternative.

Natural Environment

- Natural wetlands, open space, and forest habitat
- Rouchleau Pit – a large water reservoir visible from select locations at the edge of Virginia and from Mineview in the Sky as a deep pit with the water surface markedly below the top of the pit walls

Cultural Environment

- Midway neighborhood/Eveleth and Ridgewood area – developed residential areas
- Virginia US 53 commercial corridor – developed commercial areas
- UTAC mine – existing mining operations south of Virginia, also known as “Auburn Pit”
- Mineview in the Sky – a viewing platform open to the public, offering views of the surrounding environment
- OHVRA – primarily wooded lands to the east of Landfill Road where trails are planned to be available for motorized vehicle use

Highway Environment

- Existing roadways

4.8.2.1 No Build Alternative (Easement Agreement Area Closed)



Natural

The No Build Alternative area has generally flat topography along the designated reroute roadways, with a mix of deciduous and coniferous forested areas alternating with wetlands and open pasture agricultural lands. This route provides no views of the Rouchleau Pit.

Cultural

Primary cultural features of the No Build Alternative are rural residential and commercial properties visible from the corridor. The northern portion (near US 169) of the No Build Alternative reroute also includes a more densely developed portion of Mountain Iron, where city streets, residential and commercial development, and electrical transmission lines run adjacent to the route. This route provides no views of the US 53 strip commercial area (Thunderbird Mall area), UTAC mine, Mineview in the Sky, or OHVRA features.

Highway

The No Build reroute is characterized by a two-lane rural highway cross section. As the Co. 7 corridor proceeds to the north in Mountain Iron, curb and gutter is present near the US 169 corridor, which is a four-lane highway with an open grass median. Three at-grade railroad crossings are located within the No Build corridor.

4.8.2.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



Natural

Within the existing easement agreement area, the existing US 53 corridor slopes downhill from Cuyuna Drive in the Midway area to the 2nd Avenue interchange in Virginia. The viewshed in this corridor is dominated by vegetated slopes and tree lines. The northern portion of the existing easement agreement area is marked by a transition from tree-lined corridor to open space where the surrounding environment is more visible. For southbound travelers from Virginia to Eveleth, the disturbed environment of the UTAC mine is visible. Vegetated stockpiles of mine tailings limit views into the open pit mine. The Rouchleau Pit, a water reservoir immediately north of US 53, is not visible from the highway corridor.

Cultural

For northbound US 53 travelers, the existing US 53 Alternative corridor is the primary entryway into Virginia. Big box retail, gas stations, and related commercial structures come into view. Immediately north of, and accessed by, the existing easement agreement area is Mineview in the Sky, a privately-owned viewing platform open to the public. Perched on top of an earthen embankment, Mineview in the Sky offers views of the surrounding environment, including downtown Virginia, the Rouchleau Pit water reservoir to the north, US 53, and the disturbed, operating mine environment to the south.

Highway

This portion of US 53 is marked by the interchange with MN 135. Trees fill the open spaces of this interchange, obstructing the viewshed of the highway corridor. The northern portion of this segment is marked by a four-lane rural section highway with a grassy median.

4.8.2.3 Alternative M-1



Natural

Alternative M-1 is routed through the operating UTAC mine. This open-pit mine is the dominant environmental feature of the corridor, which would not be a noticeably different view from that from the existing easement agreement area.

Cultural

As a symbol of the Iron Range economy and an important part of the regional economy, the UTAC mine is part of the cultural environment. The north end of the M-1 alignment enters the US 53 commercial corridor and would provide similar views as the existing corridor. The views of and from the residential and commercial areas and Mineview in the Sky would not change the perception of these features.

Highway

No public roadways currently exist in the M-1 corridor. The new four-lane roadway would be on a narrower cross section than the existing segment. The northbound lanes of existing US 53 would be used to maintain two-lane connections to 2nd Avenue in Virginia and to MN 135.

4.8.2.4 Alternative E-1A



Natural

The Alternative E-1A affected environment is characterized by an undulating landscape with deciduous forests. Neighboring lands have been disturbed by past mining activity; vegetation in this area is in the early stages of regeneration. The Rouchleau Pit is a large water reservoir visible from select locations at the edge of Virginia and from Mineview in the Sky as a deep pit with the water surface markedly below the top of the pit walls.

Cultural

Neighboring lands surrounding 2nd Avenue at the west end of Alternative E-1A are primarily residential and commercial. The topography and vegetation in this area currently prohibit views between US 53 and the developed parcels. The Rouchleau Pit is a remnant of past mine operations. As such, the pit is reflective of Virginia's mining history. Neighboring lands to the south of the pit are within the existing easement agreement area, which is subject to planned future mining operations. Lands to the east of Landfill Road have been managed for an expansion of the OHVRA, where trails are planned to be available for motorized vehicle use.

Highway

Some of the new four-lane roadway would be on a narrower cross section than the existing segment, particularly across the Rouchleau Pit (four lanes with two foot median barrier). The Alternative E-1A environment is marked on either end with existing interchanges at 2nd Avenue and MN 135.

4.8.2.5 Alternative E-2



Natural

The Alternative E-2 affected environment is characterized by an undulating landscape with deciduous forests and includes a portion of the Landfill Road corridor. Neighboring lands have been disturbed by past mining activity; vegetation in this area is in the early stages of regeneration. The Rouchleau Pit is a large water reservoir visible from select locations at the edge of Virginia and from Mineview in the Sky as a deep pit with the water surface markedly below the top of the pit walls.

Cultural

Neighboring lands surrounding 2nd Avenue at the west end of Alternative E-2 are primarily residential and commercial. The topography and vegetation in this area currently prohibit views between US 53 and the developed parcels. The Rouchleau Pit is a remnant of past mine operations. As such, the pit is reflective of Virginia's mining history. Neighboring lands to the south of the pit are within the existing easement agreement area, which is subject to planned future mining operations. Lands to the east of Landfill Road have been managed for an expansion of the OHVRA, where trails are planned to be available for motorized vehicle use.

Highway

Landfill Road is a two-lane road corridor with drainage ditches on either side. Some of the new four-lane roadway would be on a narrower cross section than the existing segment. The Alternative E-2 environment is marked on either end with existing interchanges at 2nd Avenue and MN 135.

4.8.3 Environmental Consequences

Visual impacts are the perceived changes in visual quality of an existing scene. The discussion of visual impacts for each alternative is structured according to the three environments used in the description of existing conditions above: natural environment, cultural environment, and highway environment. MnDOT guidance for assessing the degree of visual impact provides three criteria that may be used:

- Value of a visual impact (beneficial, adverse, or unchanged)
- Scale of impact (minor or major)
- Extent of impact (localized or widespread)

4.8.3.1 No Build Alternative (Easement Agreement Area Closed)



Natural

The No Build Alternative does not require additional right-of-way or the construction of new roadway or related equipment. Therefore, the visual quality impacts for views from neighboring properties would be unchanged.

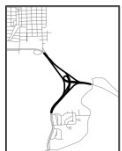
Cultural

Neighbors of existing US 53 would notice no change to the existing scene. Through travelers on US 53 would no longer view Virginia business areas or landmarks (including Mineview in the Sky viewing platform).

Highway

Changes to the visual environment that would occur in the No Build corridor include replacement signing for the conversion of existing state and county roads to the US 53 designation. The two-lane corridor that would be used for the No Build Alternative represents a change in highway design (versus the four lanes on the rest of the corridor) for travelers of US 53. These are minor impacts that are neither beneficial nor adverse. However, views of traffic congestion would increase from adjacent properties.

4.8.3.2 Existing US 53 Alternative (Easement Agreement Area Remains Open)



No impacts result from this alternative, which retains all existing features of US 53.

4.8.3.3 Alternative M-1



Natural

There would be no impacts to natural environment resources.

Cultural

The most notable impact to cultural environment would be a minor change in views of the UTAC mine from US 53. For northbound US 53 travelers, the US 53 commercial corridor would become more apparent upon the approach into Virginia from Midway. Based on public comments received during Scoping, this new view into the mine would be considered a beneficial impact for some viewers from the highway. Minor changes in land access for connections to 2nd Avenue and MN 135 would have minimal visual impact to or from US 53.

The section of Alternative M-1 over the mine would include an elevated tunnel to mitigate potential mine business and operational risk impacts as a result of mine air quality requirements, and to reduce exposure of road users to exceedances in particulate matter (PM10). The use of an elevated tunnel would inhibit views of the mine from the highway and would limit views approaching the US 53 commercial corridor.

Highway

An assumed constrained cross section, including median barriers, for US 53 through the UTAC mine would have a minor impact on views of the highway environment for users of US 53. An elevated tunnel option would also change the views of the highway environment.

4.8.3.4 Alternative E-1A



Natural

Crossing the Rouchleau pit would represent a minor change to that existing scene, as there are few views of the scene available currently. The exception would be from the Mineview in the Sky platform, where the pit crossing, under the RSS Option or the Bridge Option, would represent a change to the visual setting by introducing a bridge or fill section across the Rouchleau Pit. Open lands to the east of the pit would also have views of the new highway corridor. There would be view changes resulting from impacts to the open space area east of the pit, due to proposed local roadway connections on the new alignment.

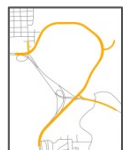
Cultural

By retaining existing access location points at 2nd Avenue and MN 135, there are no impacts to views of and from the adjacent residential and commercial areas of US 53, with the exception of interchange bridges for the Interchange Option.

Highway

An assumed constrained cross section, including median barriers and barriers on both sides of the roadway, for US 53 through the Rouchleau Pit would have a minor, localized impact on views of the highway environment for users of US 53. The lower elevation of the RSS Option would give users a lower perspective through the pit than the Bridge Option. A short segment of Landfill Road would also need to be shifted east due to elevation differences between it and the new US 53 alignment, slightly changing the visual environment. The Intersection Option at US 53/MN 135 would result in less pavement than exists today. The Interchange Option at US 53/MN 135 would result in similar pavement area as today but with a new configuration that otherwise follows a similar alignment and would not result in a substantial change as compared to the Intersection Option. This alternative shifts east of the US 53 alignment providing increased views of forests, wetlands, and rock cut areas.

4.8.3.5 Alternative E-2



Natural

Crossing the Rouchleau pit would represent a minor change to that existing scene, as there are few views of the scene available currently. The exception would be from the Mineview in the Sky platform, where the pit crossing would represent a change to the visual setting. Open lands to the east of the pit would also have views of the new highway corridor and the large bridge structure spanning the pit.

Cultural

By retaining existing access location points at 2nd Avenue and MN 135, there are no impacts to views of and from the adjacent residential and commercial areas of US 53.

Highway

An assumed constrained cross section, including median barriers and barriers on both sides of the roadway, for US 53 through the Rouchleau Pit would have a minor, localized impact on views of the highway environment for users of US 53. The Intersection Option at US 53/MN 135 would result in less

pavement than exists today. The Interchange Option at US 53/MN 135 would result in similar pavement area as today but with a new configuration that otherwise follows a similar alignment and would not result in a substantial change as compared to the Intersection Option. The Straight Option would have similar views along US 53, south of MN 135. The Curved Setback Option shifts east of the US 53 alignment, providing increased views of forests, wetlands, and rock cut areas.

4.8.4 Avoidance, Minimization, and Mitigation Measures

Mitigation of visual impacts was incorporated into the alignment and design of the proposed alternatives to avoid or minimize adverse visual impacts, resulting in relatively minor visual impacts as described in the previous section. No mitigation of minor adverse impacts is necessary.

MnDOT will develop visual quality guidelines for the project and take input from a Visual Quality Review Committee (VQRC). The guidelines will cover many aspects of project design including bridge features (such as pier shapes, bridge abutment surfaces, and railings), retaining walls, roadways, grading, slope protection, barriers, lightning, signage, vegetation, and miscellaneous elements that would affect aesthetics that may be identified. Aesthetic decisions will also be informed by engineering analyses and other technical reviews and by setting constraints (e.g., access, relation to mine operations, height over water). The visual quality guidelines will become a resource for project designers during final design so that aesthetic decisions and strategies are carried forward faithfully.

No Build Alternative

The No Build Alternative minimizes visual impacts by using existing highway corridors. However, the US 53 traveler would have a changed experience, from existing four-lane to two-lane within the US 53 reroute segment.

Existing US 53 Alternative

The Existing US 53 Alternative avoids impacts by retaining use of all existing roads.

Alternative M-1

This route minimizes impacts to the natural environment by using a disturbed open pit mine corridor. Localized impacts to the visual setting at local connections result in an unchanged setting that minimizes impacts. The use of an elevated tunnel would have a moderate impact on the visual environment in this area, by providing more of a barrier and inhibiting views from the roadway and of the roadway.

Alternative E-1A

The local visual impacts caused by modifications to the local connections at 2nd Avenue and MN 135 are minimized due to the reuse of existing US 53 alignment in those areas.

Alternative E-2

Localized impacts to open space east of the Rouchleau Pit are minimized by using the Landfill Road corridor. The local visual impacts caused by modifications to the local connections at 2nd Avenue and MN 135 are minimized due to the reuse of existing US 53 alignment in those areas.



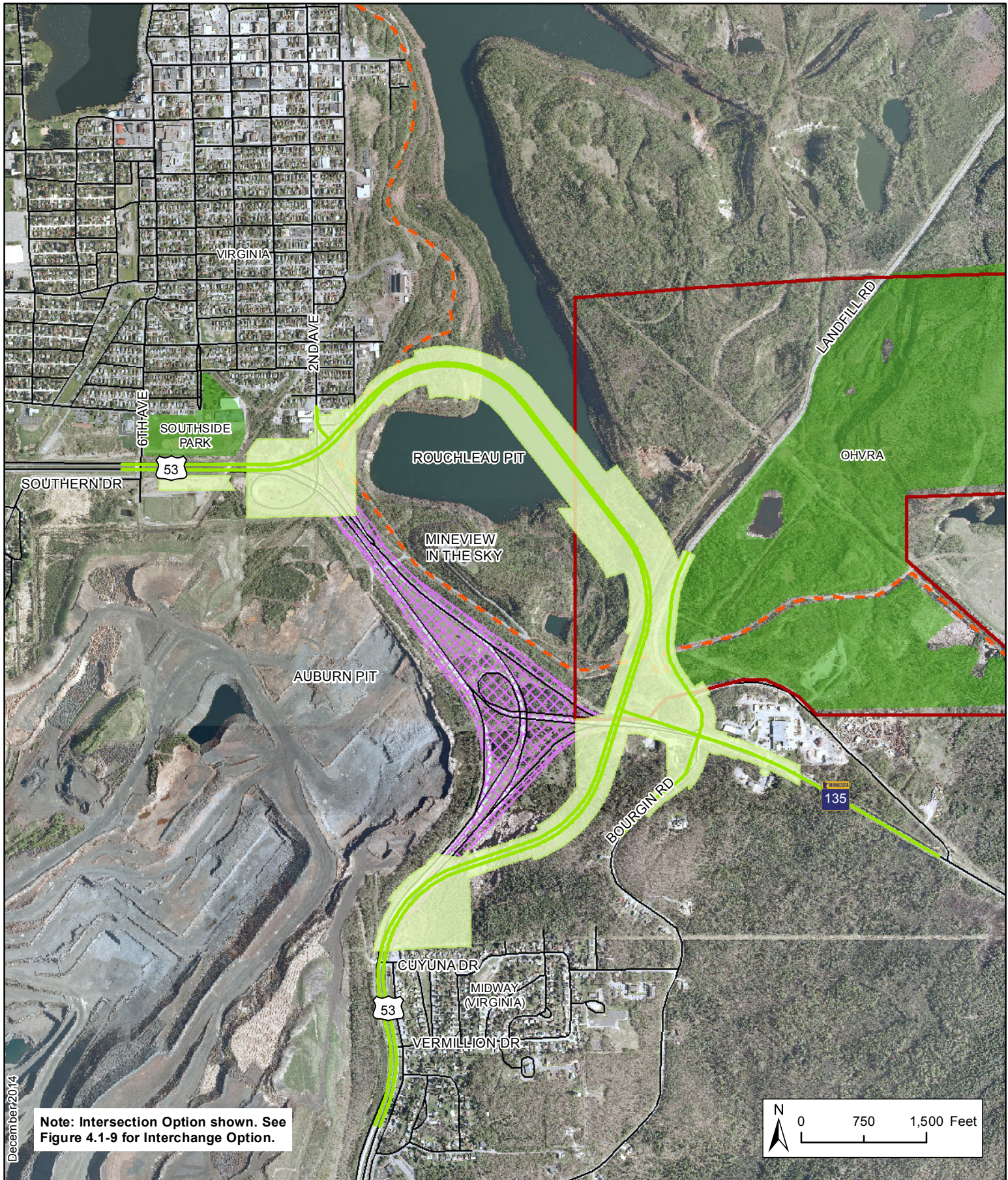
Source: USGS Aerial 2011



Legend

- | | |
|---|--|
| — Alternative M-1 | --- Existing Mesabi Trail |
| Alternative M-1 Proposed Right-of-Way Limits | Existing Public Recreation Land |
| Existing US 53 Easement Agreement Area | Existing School Trust Land |

Figure 4.1-1
Alternative M-1
Proposed Right-of-Way Limits
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement

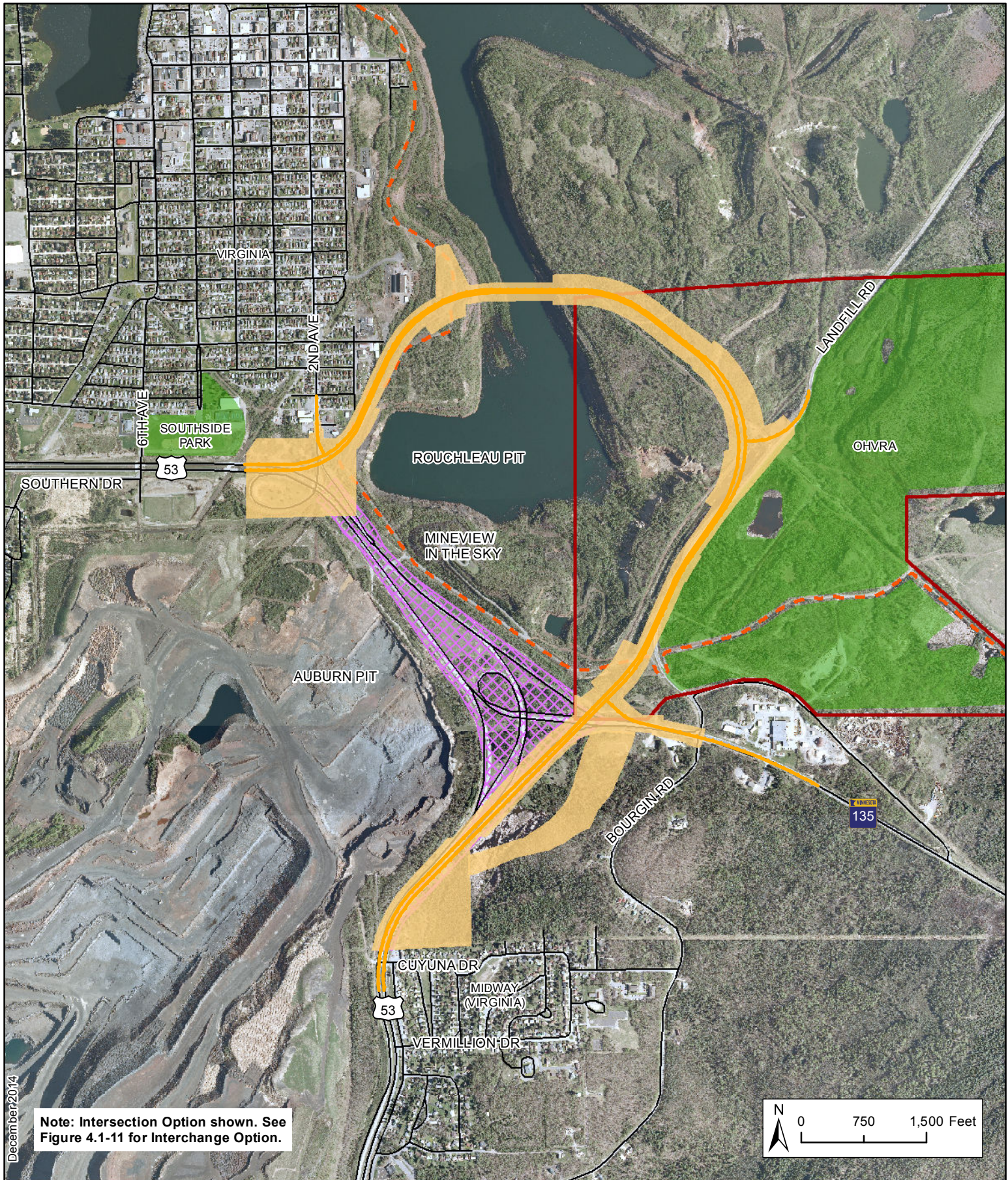


Legend

- Alternative E-1A
- Alternative E-1A Proposed Right-of-Way Limits
- Existing US 53 Easement Agreement Area
- Existing School Trust Land
- - - Existing Mesabi Trail
- Existing Public Recreation Land



Figure 4.1-2
Alternative E-1A
Proposed Right-of-Way Limits
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement

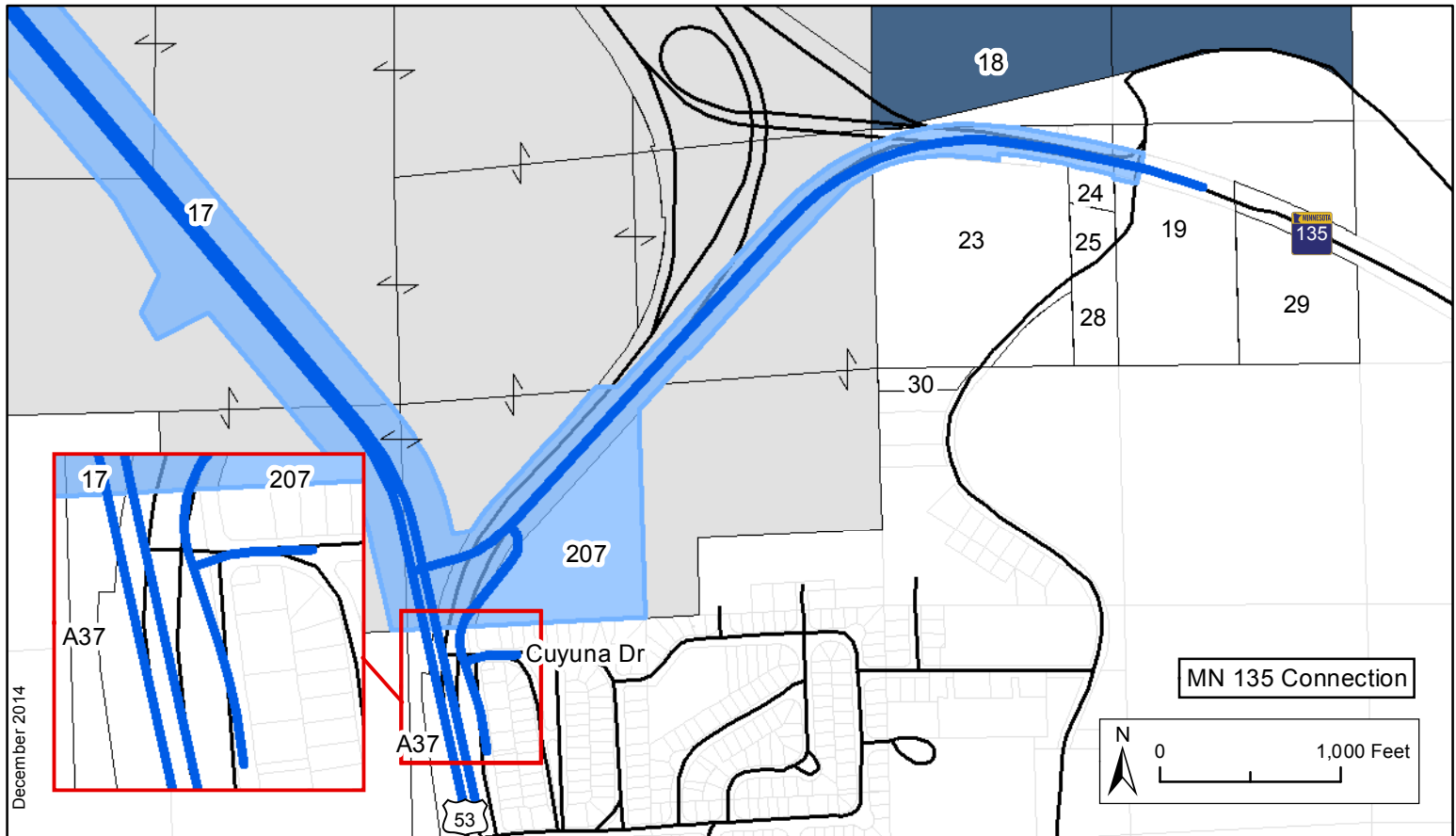
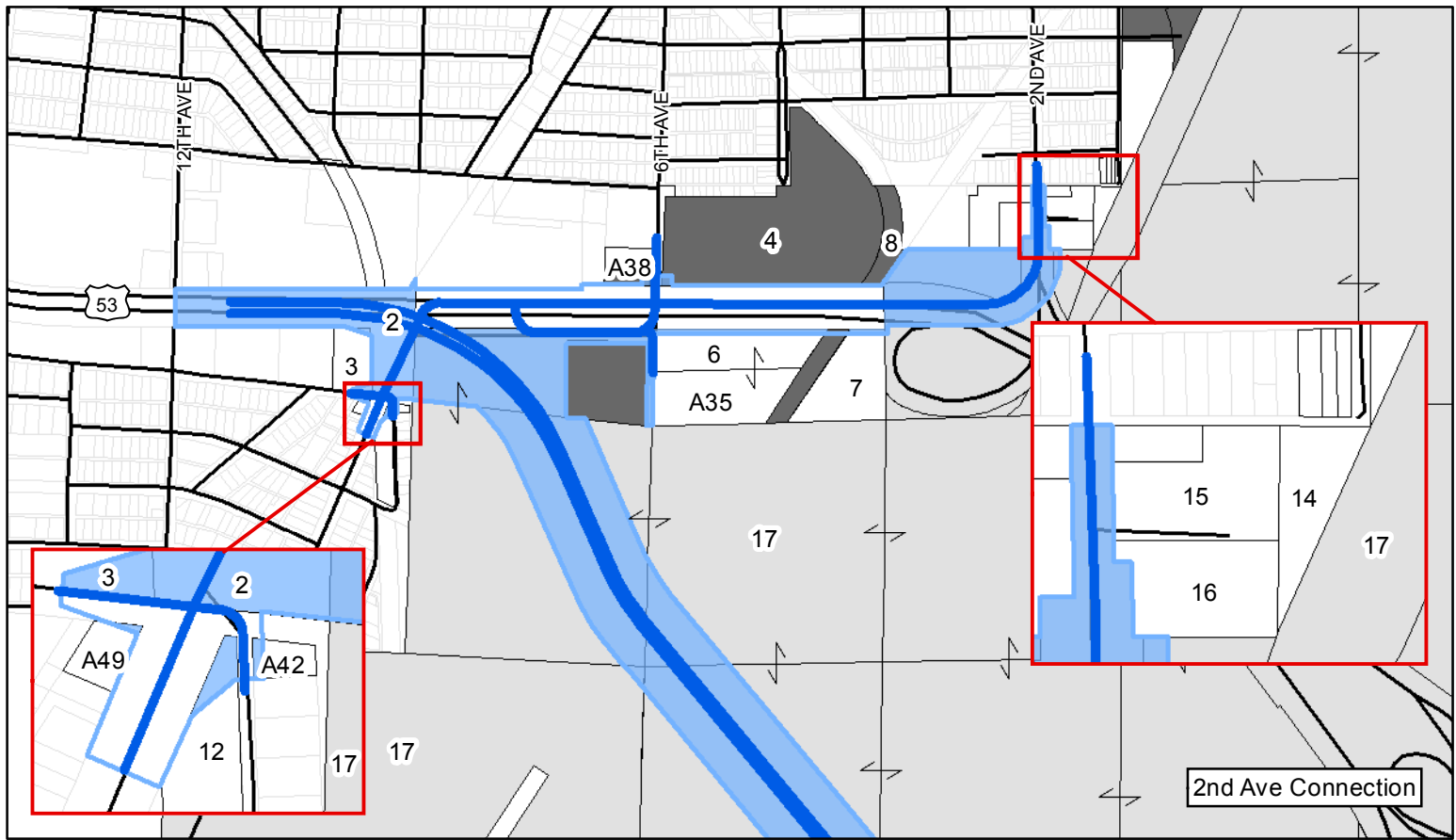


Legend

- Alternative E-2
- Alternative E-2 Proposed Right-of-Way Limits
- Existing US 53 Easement Agreement Area
- Existing School Trust Land
- - - Existing Mesabi Trail
- Existing Public Recreation Land



Figure 4.1-3
Alternative E-2
Proposed Right-of-Way Limits
US Highway 53 Virginia to Eveleth
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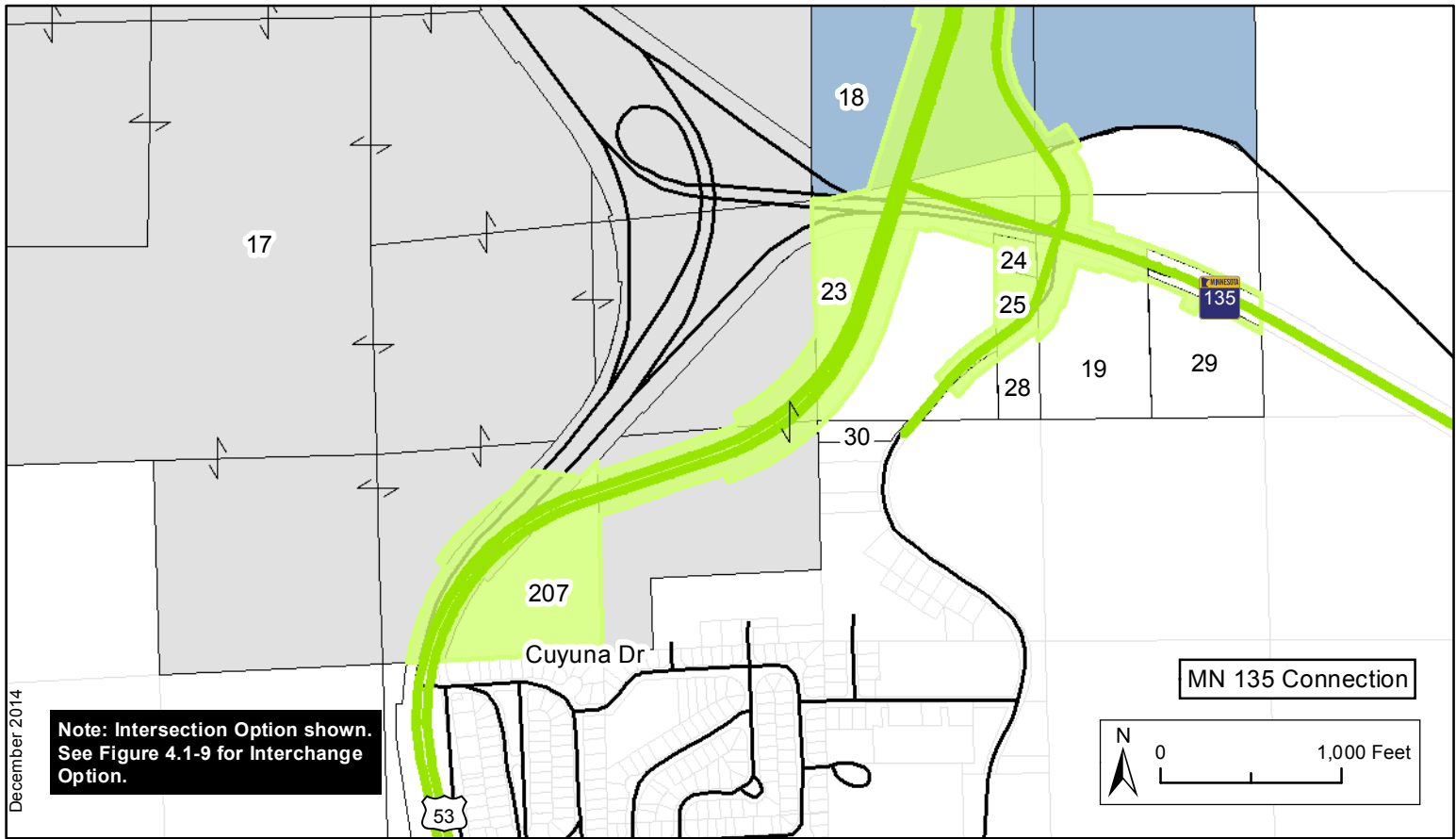
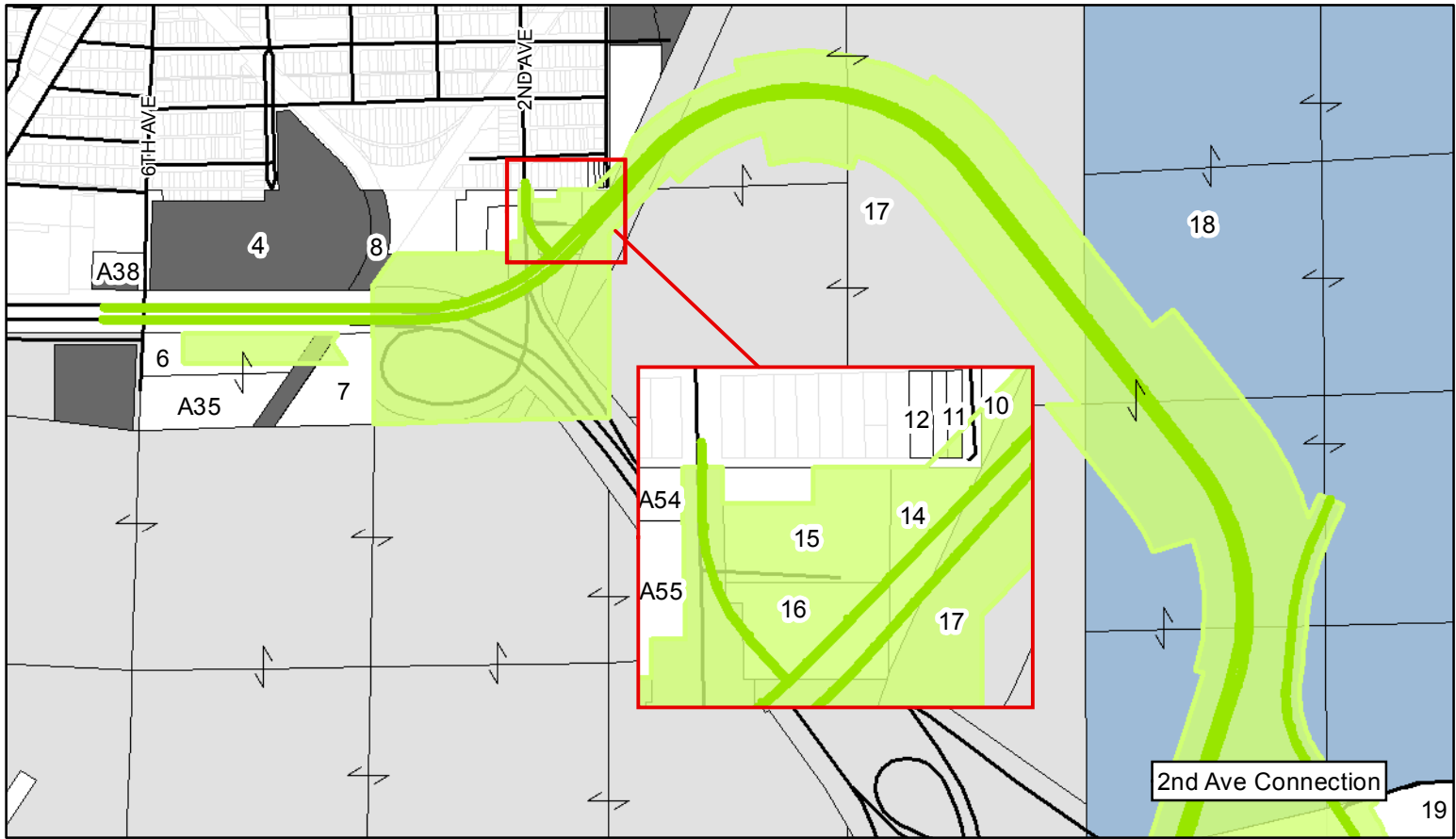


Legend

- Connected Parcels
- Alternative M-1
- Alternative M-1 Proposed Right-of-Way Limits
- Potential New Right-of-Way

- # Parcel Number
- Parcel Boundaries
- Parcel 4 & 8 (City of Virginia)
- Parcel 17 (RGGS)
- Parcel 18 (State of Minnesota DNR/School Trust)

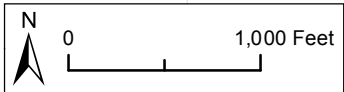
Figure 4.1-4
Alternative M-1 Parcel Impacts
 US Highway 53 Virginia to Eveleth
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Note: Intersection Option shown.
See Figure 4.1-9 for Interchange
Option.

MN 135 Connection



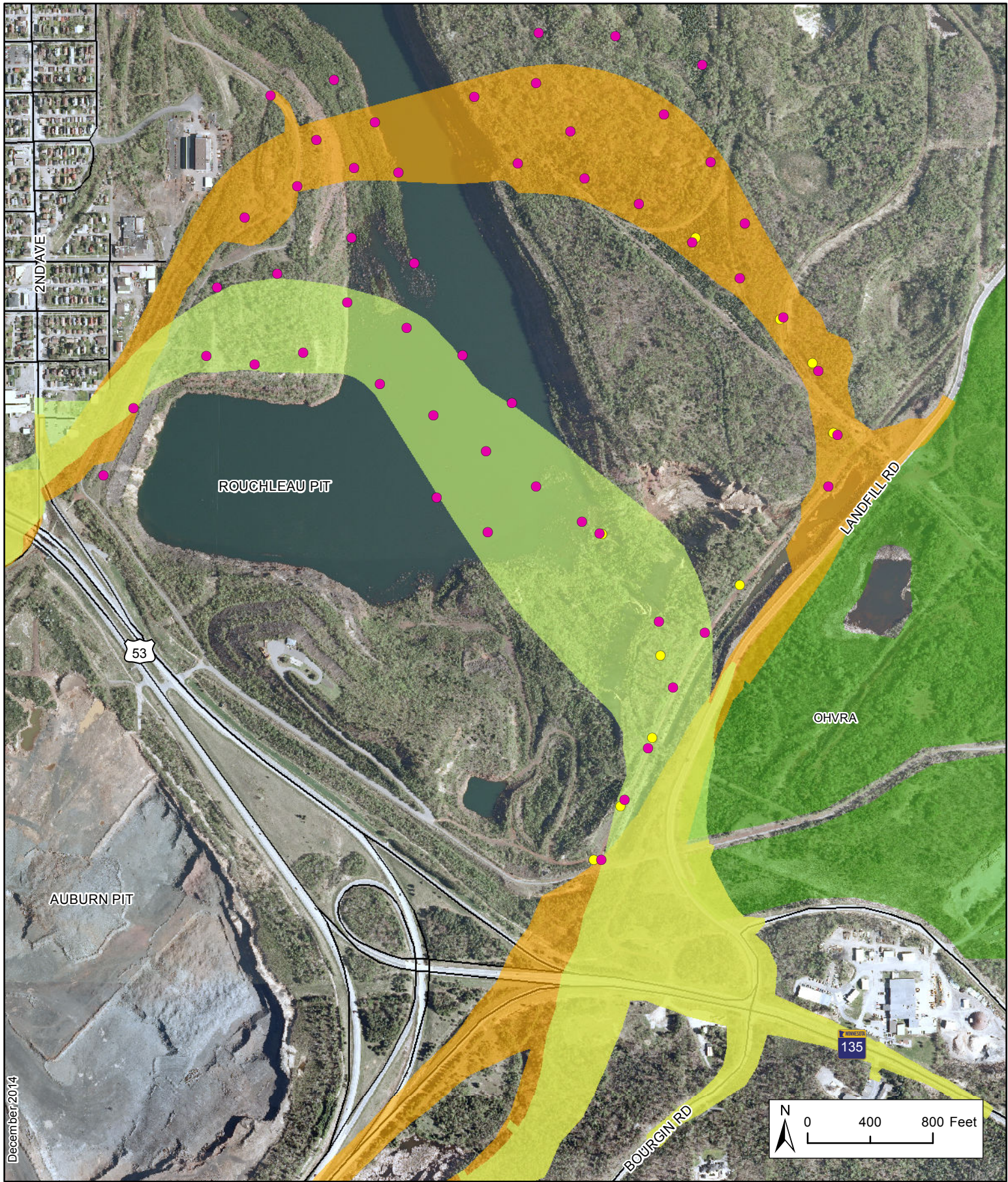
Legend

- Connected Parcels
- Alternative E-1A
- Alternative E-1A Proposed Right-of-Way Limits
- Potential New Right-of-Way

- # Parcel Number
- Parcel Boundaries
- Parcel 4 & 8 (City of Virginia)
- Parcel 17 (RGGS)
- Parcel 18 (State of Minnesota DNR/School Trust)

Figure 4.1-5
Alternative E-1A Intersection
Option Parcel Impacts
US Highway 53 Virginia to Eveleth
Draft Environmental Impact Statement





Source: USGS Aerial 2011

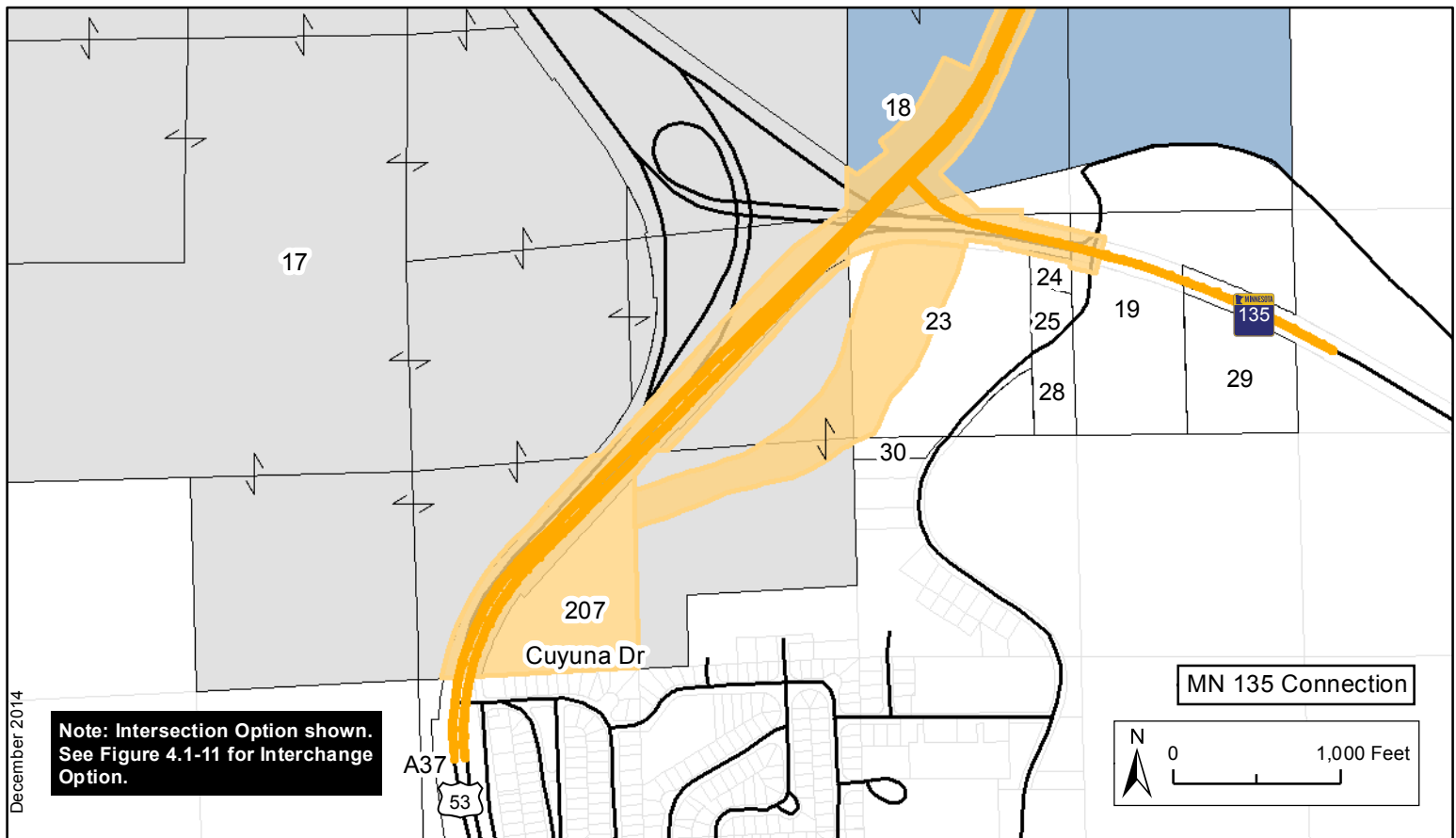
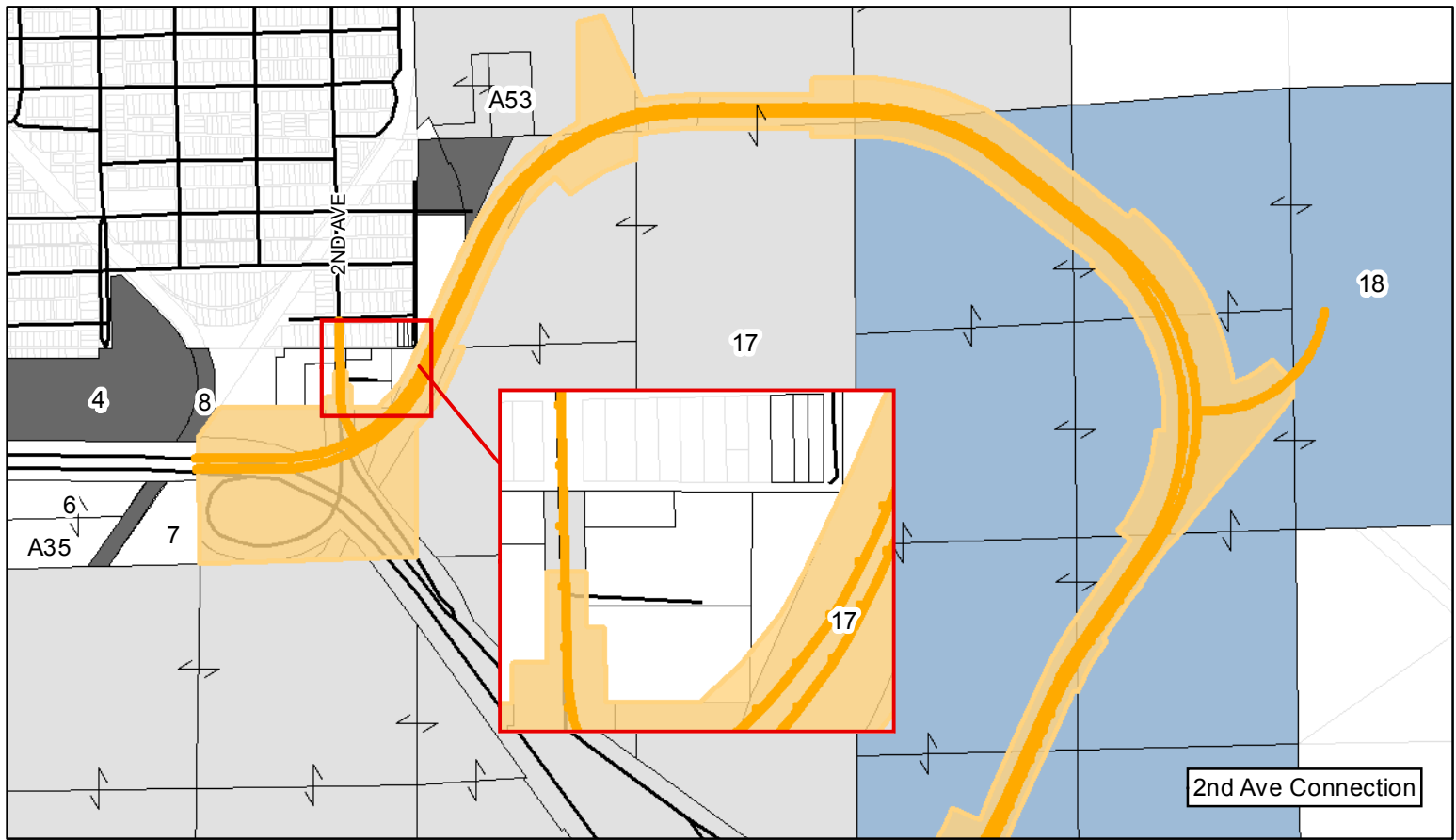


Legend

- Ferrous Exploratory Boring Locations
- Non-Ferrous Exploratory Boring Locations

- Alternative E-1A Area of Evaluation
- Alternative E-2 Area of Evaluation

Figure 4.1-6
Exploratory Borehole Sites
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement



Legend

- Connected Parcels
- Alternative E-2
- Alternative E-2 Proposed Right-of-Way Limits
- Potential New Right-of-Way

Parcel Number

- Parcel Boundaries
- Parcel 4 & 8 (City of Virginia)
- Parcel 17 (RGGS)
- Parcel 18 (State of Minnesota DNR/School Trust)

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Figure 4.1-7
Alternative E-2 Intersection
Option Parcel Impacts
 US Highway 53 Virginia to Eveleth
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Source: USGS Aerial 2011, DNR Environmental Setting Boundary



Legend

- Estimated 300 Foot Setback
- Alternative M-1 Proposed Right-of-Way Limits
- Existing US 53 Easement Agreement Area
- UTAC Environmental Setting Boundary
- - - Existing Mesabi Trail
- Existing Public Recreation Land
- Existing School Trust Land

Figure 4.1-8
Alternative M-1
Estimated Setback
US Highway 53 Virginia to Eveleth
Draft Environmental Impact Statement



Legend

↔ Connected Parcels

Alternative E-1A

Alternative E-1A Proposed Right-of-Way Limits

Potential New Right-of-Way

Parcel Number
Parcel Boundaries

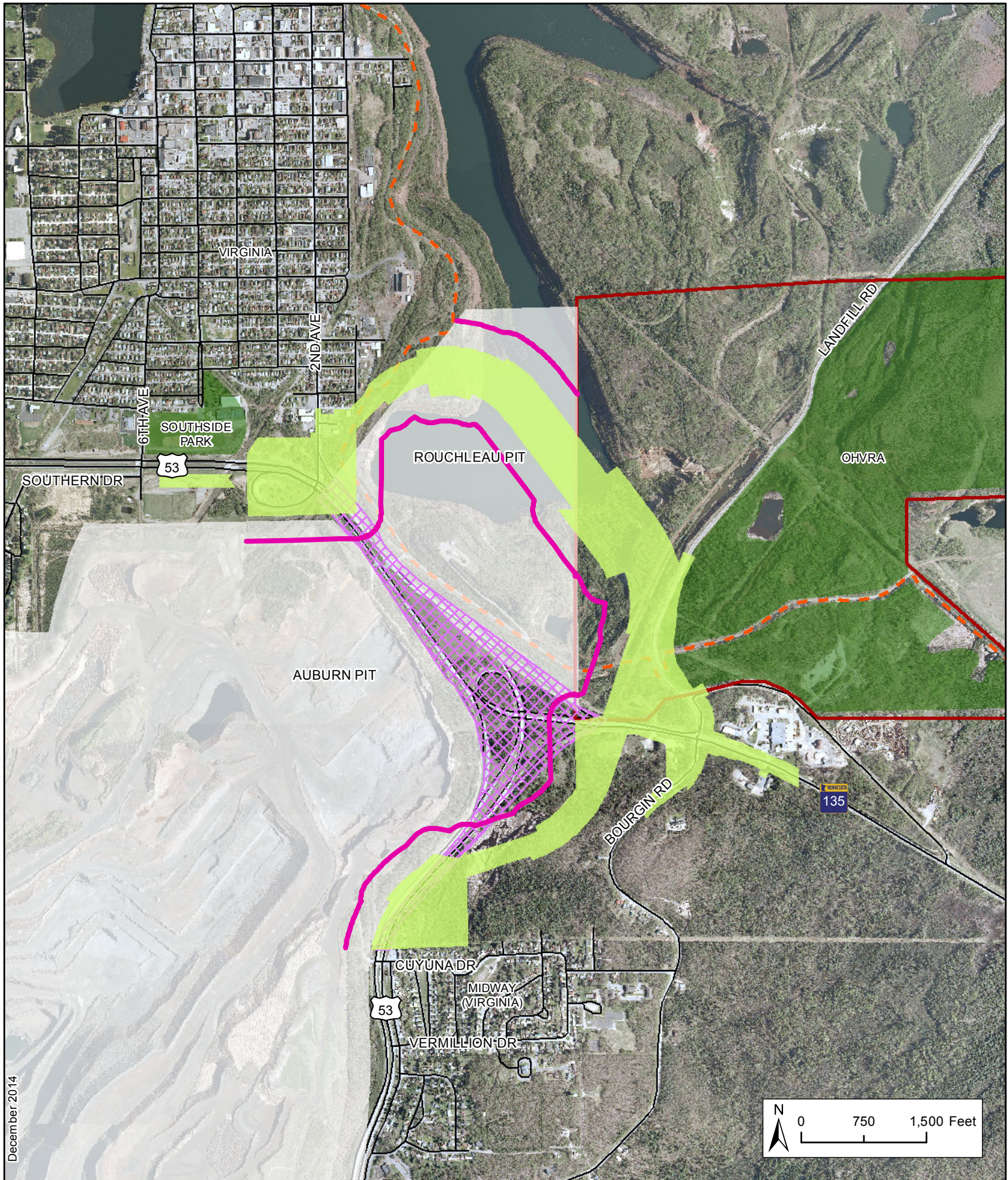
Parcel 4 & 8 (City of Virginia)

Parcel 17 (RGGS)

Parcel 18 (State of Minnesota
DNR/School Trust)



Figure 4.1-9
Alternative E-1A Interchange
Option Parcel Impacts
US Highway 53 Virginia to Eveleth
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Source: USGS Aerial 2011, DNR Environmental Setting Boundary

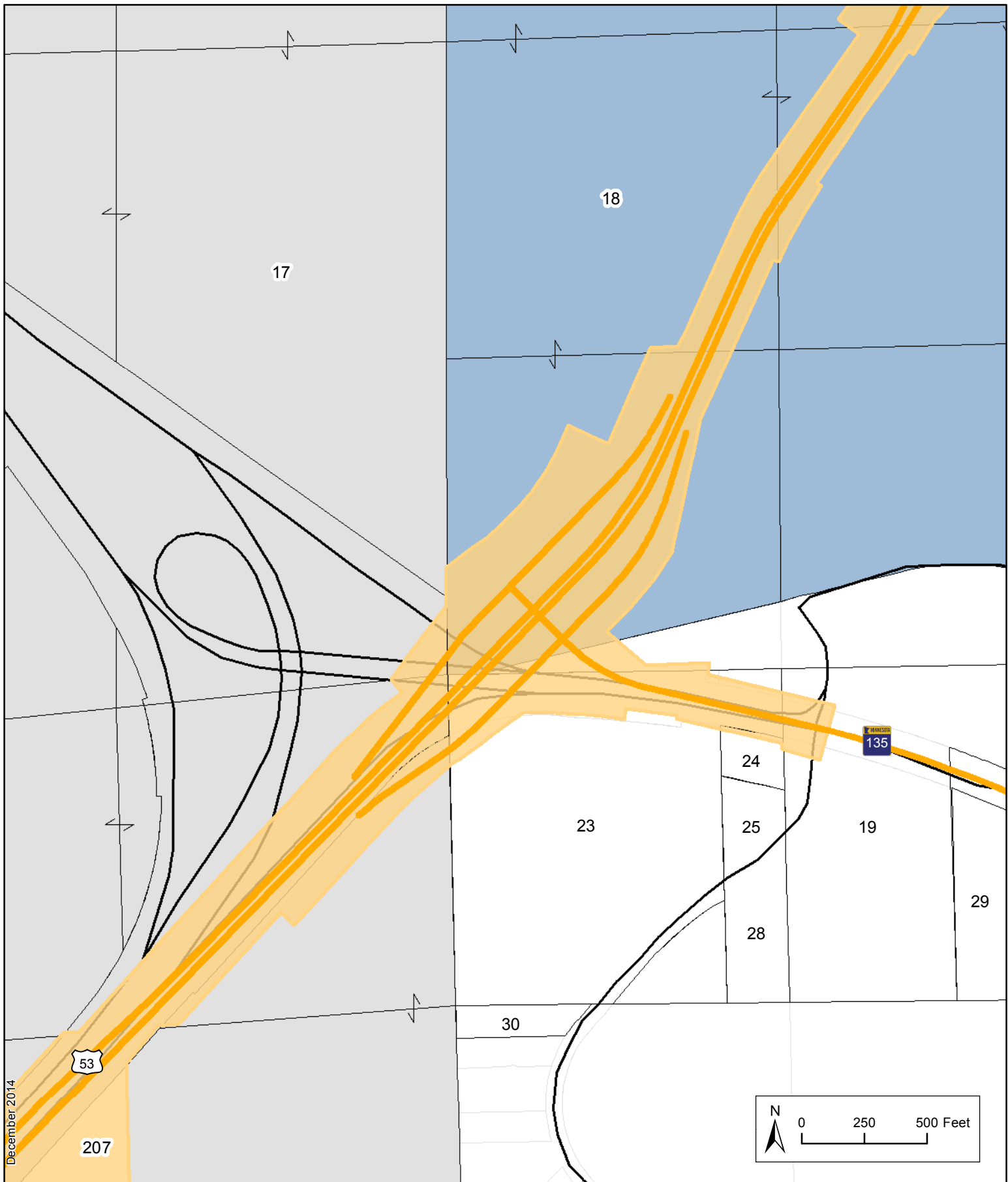


Legend

- Estimated 300 Foot Setback
- Alternative E-1A Proposed Right-of-Way Limits
- ▨ Existing US 53 Easement Agreement Area
- UTAC Environmental Setting Boundary
- Existing Public Recreation Land
- - - Existing Mesabi Trail
- Existing School Trust Land

Figure 4.1-10
Alternative E-1A
Estimated Setback

*US Highway 53 Virginia to Eveleth
Draft Environmental Impact Statement*



Legend

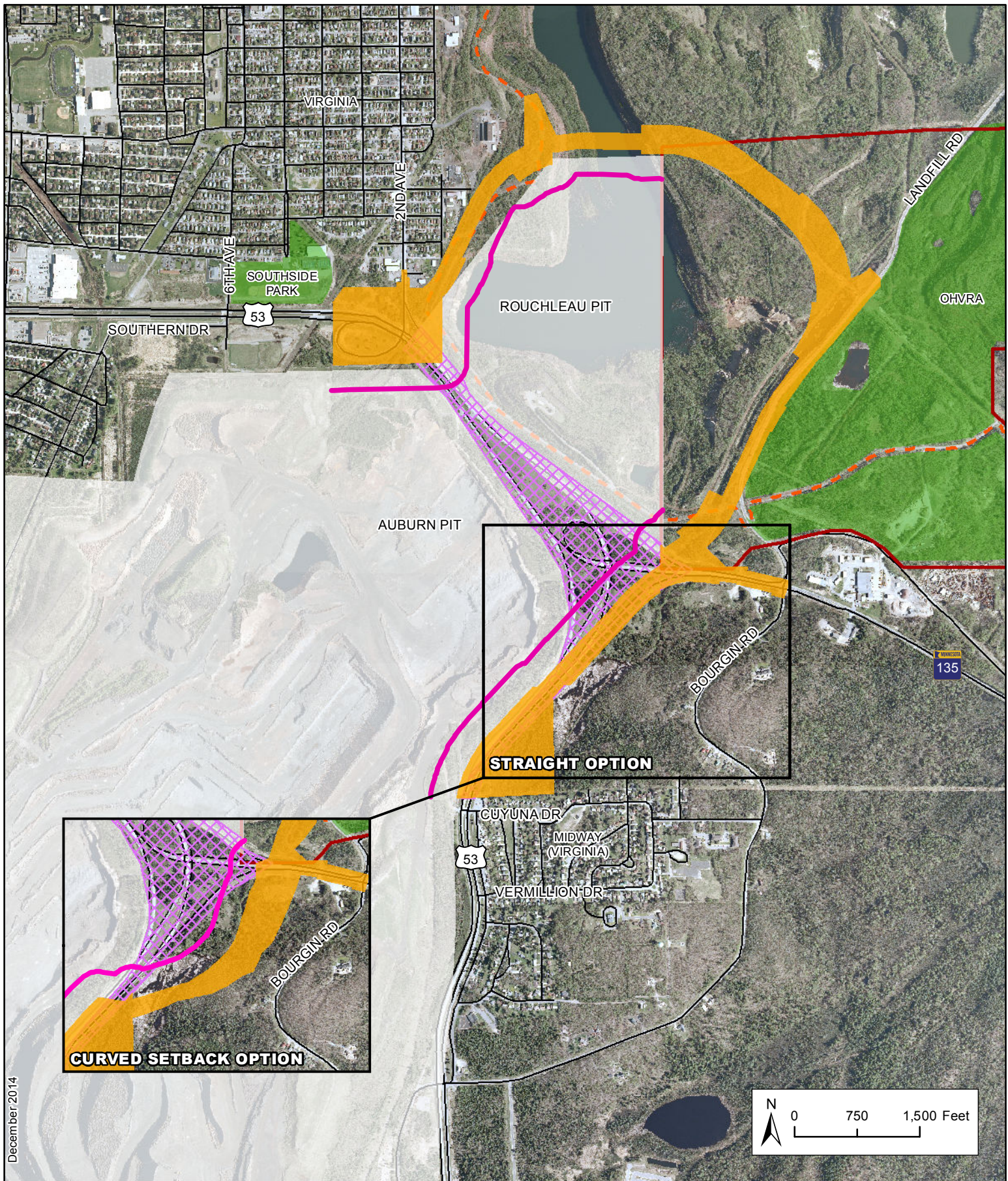
- Connected Parcels
- Alternative E-2
- Alternative E-2 Proposed Right-of-Way Limits
- Potential New Right-of-Way

Parcel Number

- Parcel Boundaries
- Parcel 4 & 8 (City of Virginia)
- Parcel 17 (RGGS)
- Parcel 18 (State of Minnesota DNR/School Trust)

Figure 4.1-11
Alternative E-2 Interchange Option
Parcel Impacts
US Highway 53 Virginia to Eveleth
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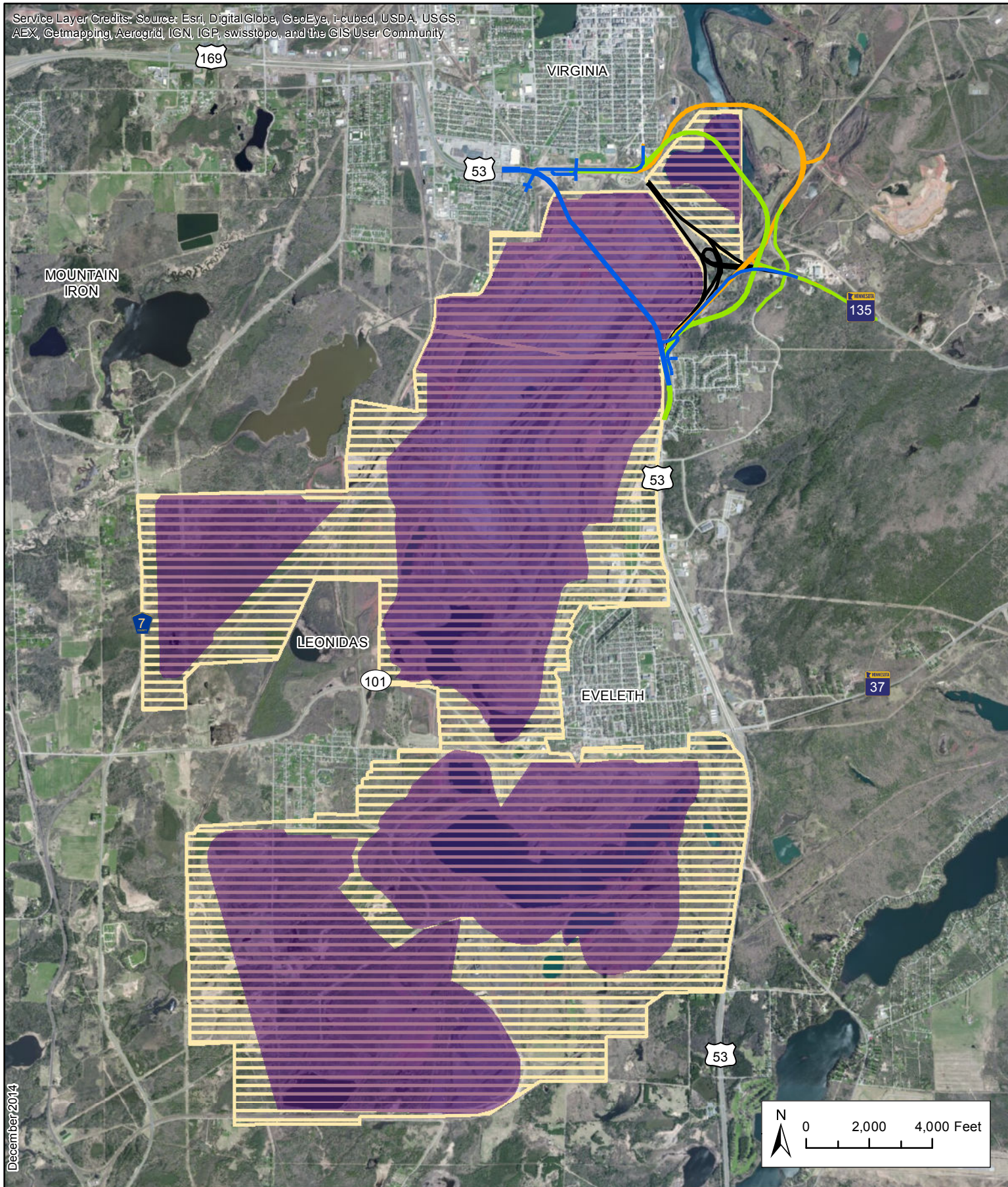




Legend

- Estimated 300 Foot Setback
- Alternative E-2 Proposed Right-of-Way Limits
- Existing US 53 Easement Agreement Area
- UTAC Environmental Setting Boundary
- Existing Public Recreation Land
- Existing School Trust Land
- Existing Mesabi Trail

Figure 4.1-12
Alternative E-2
Estimated Setback
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement



Source: DNR



Legend

- | | |
|----------------------------|-------------------------------------|
| Existing US 53 Alternative | UTAC Permit to Mine Boundary |
| Alternative M-1 | UTAC Environmental Setting Boundary |
| Alternative E-1A | |
| Alternative E-2 | |

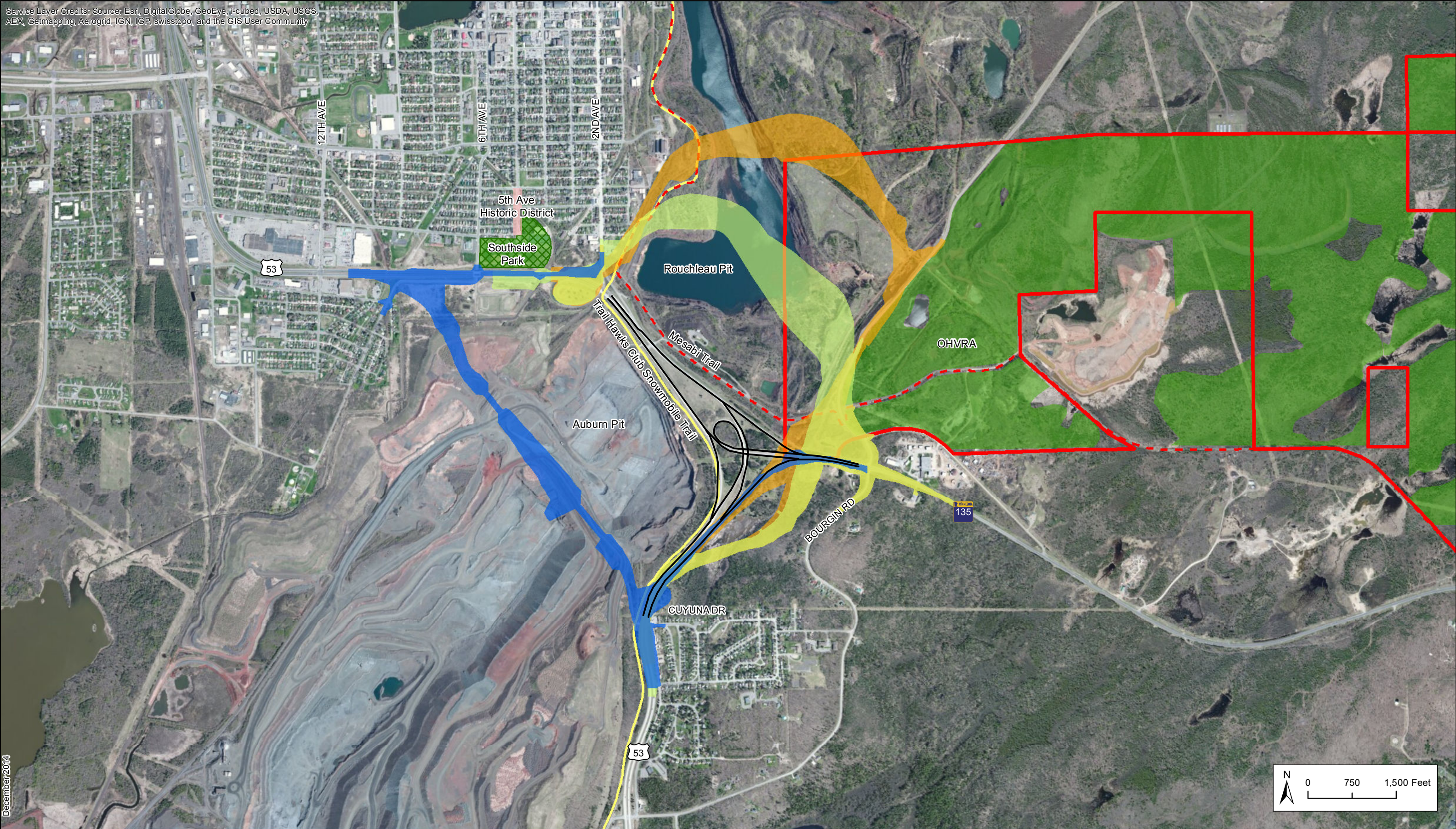
Figure 4.2-1
Known Limits of Approved
Mine Operations
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement



Legend

- Business Centers
- Commercial Strips

Figure 4.2-2
Business Centers
 US Highway 53 Virginia to Eveleth
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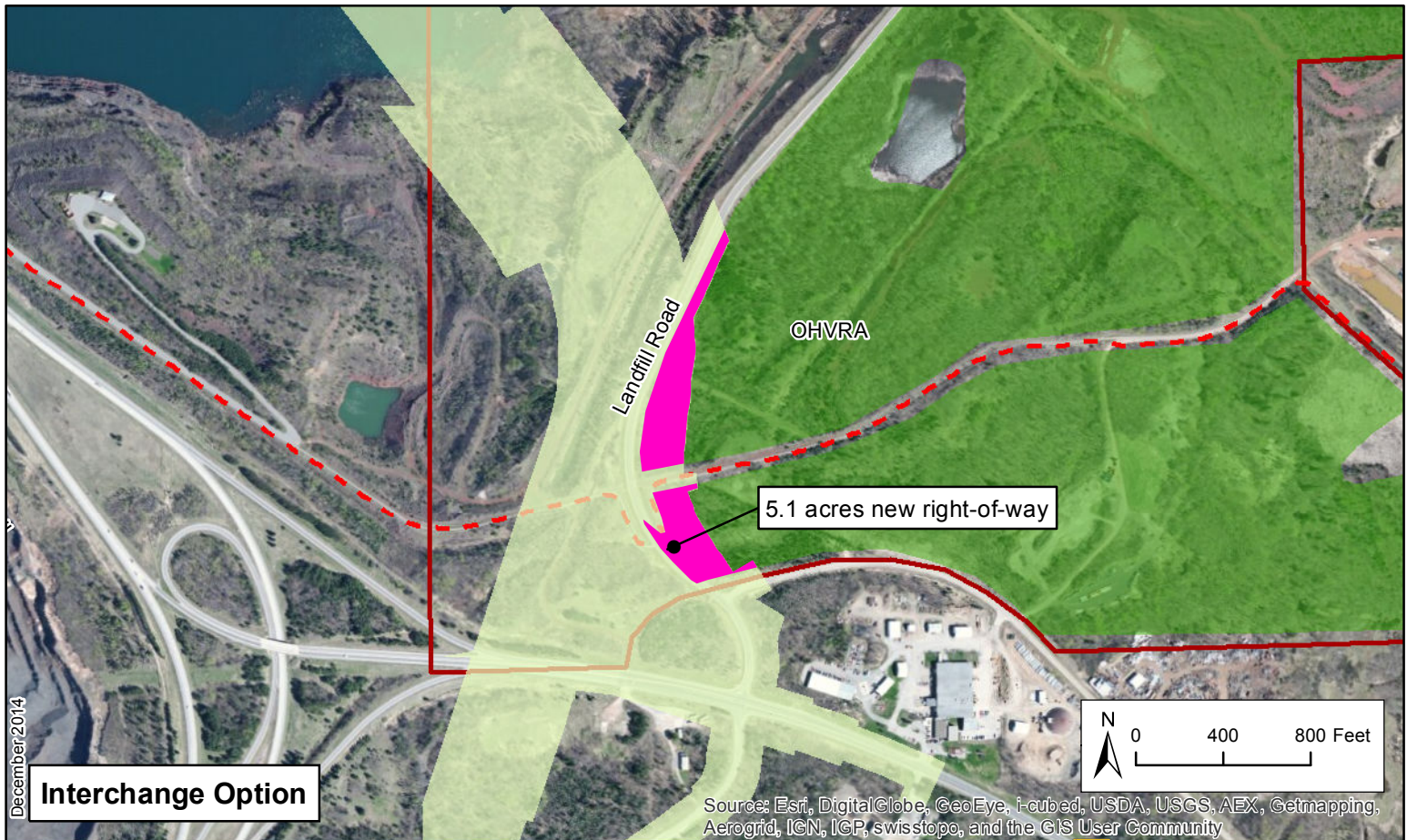
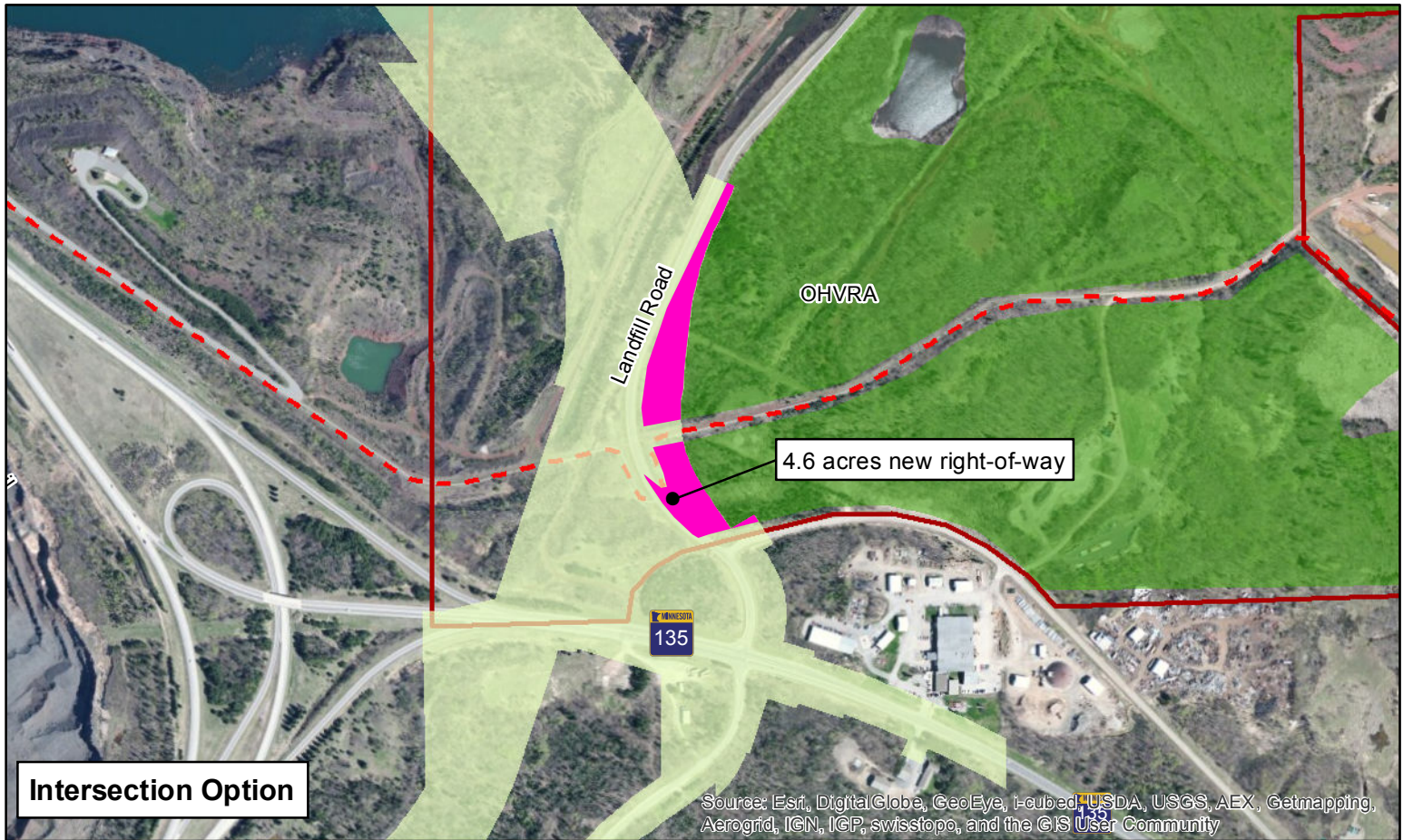
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Legend

- | | | |
|---------------------------------------|--|------------------------------|
| — Existing US 53 Alternative | - - Existing Mesabi Trail | ▤ Section 6(f) Resource |
| ■ Alternative M-1 Area of Evaluation | — Existing Trail Hawks Club Snowmobile Trail | ▭ Existing School Trust Land |
| ■ Alternative E-1A Area of Evaluation | ■ 5th Ave Historic District | |
| ■ Alternative E-2 Area of Evaluation | ■ Section 4(f) Resource | |

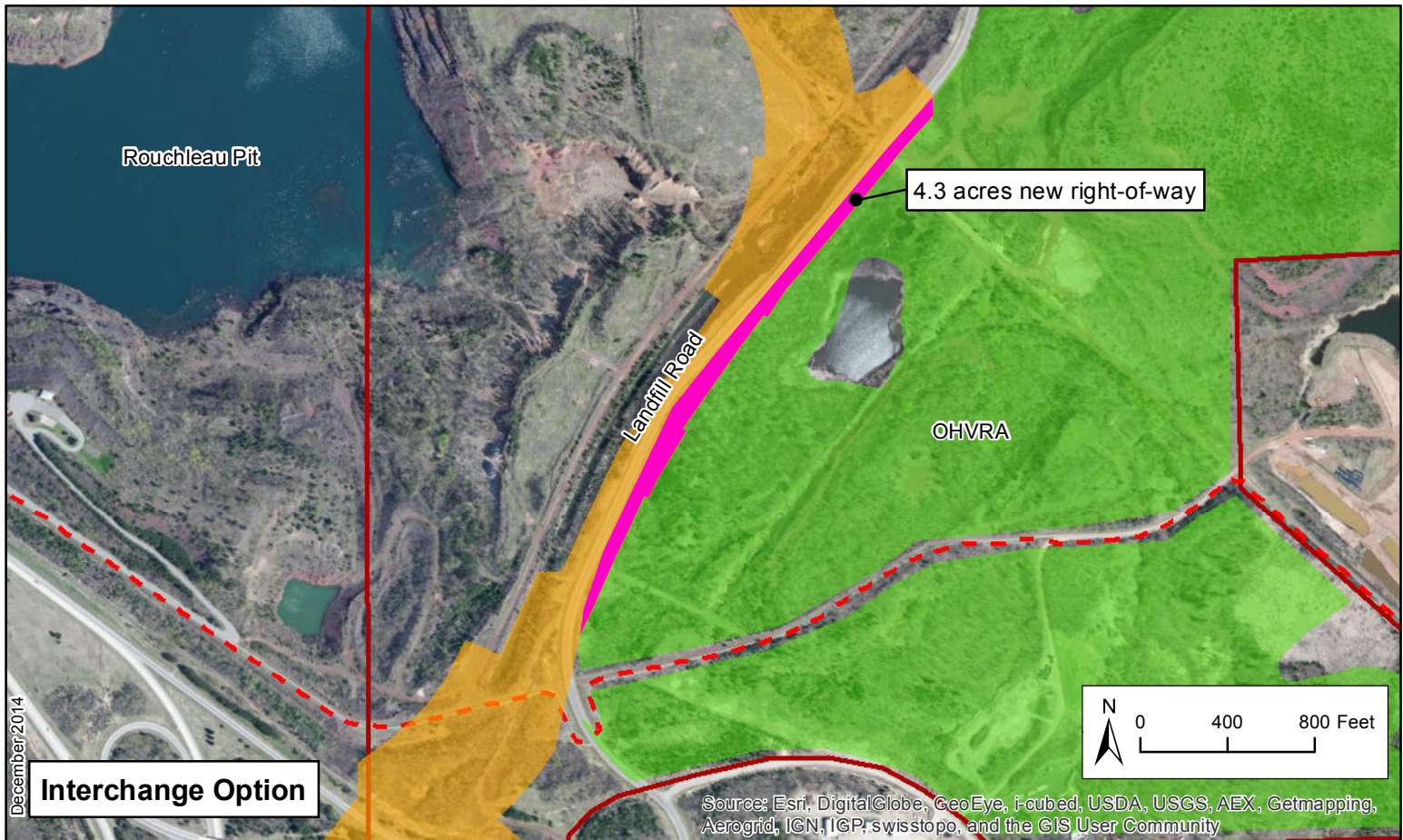
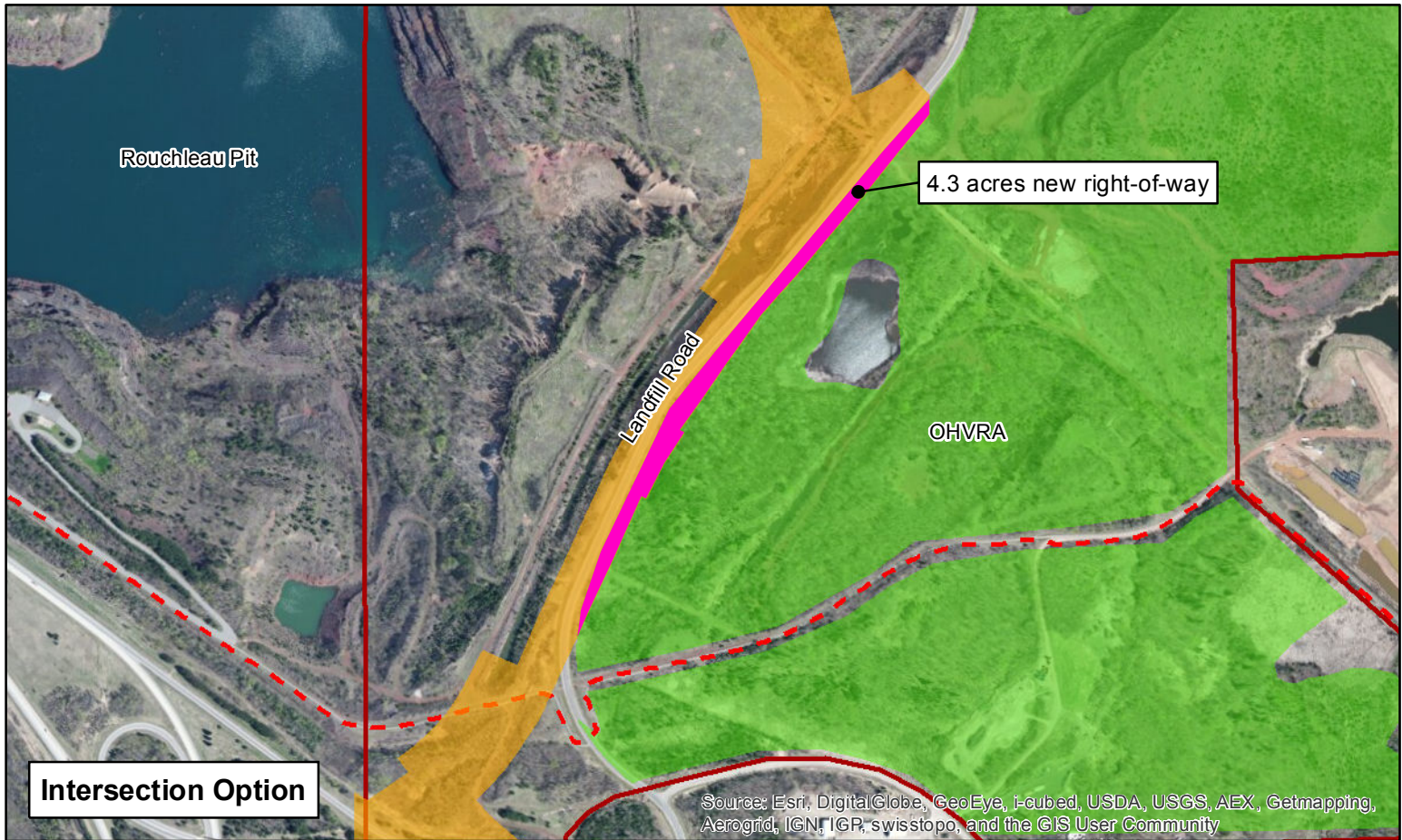
Figure 4.3-1
Parks, Trails, and Section 4(f) Resources
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement



Legend

- OHVRA Impact
- Proposed Right-of-Way Limits
- Existing Mesabi Trail
- Existing School Trust Land

Figure 4.3-2
Alternative E-1A OHVRA Impacts
 US Highway 53 Virginia to Eveleth
 Draft Environmental Impact Statement



Legend

- OHVRA Impacts
- Proposed Right-of-Way Limits
- Existing Mesabi Trail
- Existing School Trust Land

Figure 4.3-3
Alternative E-2 OHVRA Impacts
 US Highway 53 Virginia to Eveleth
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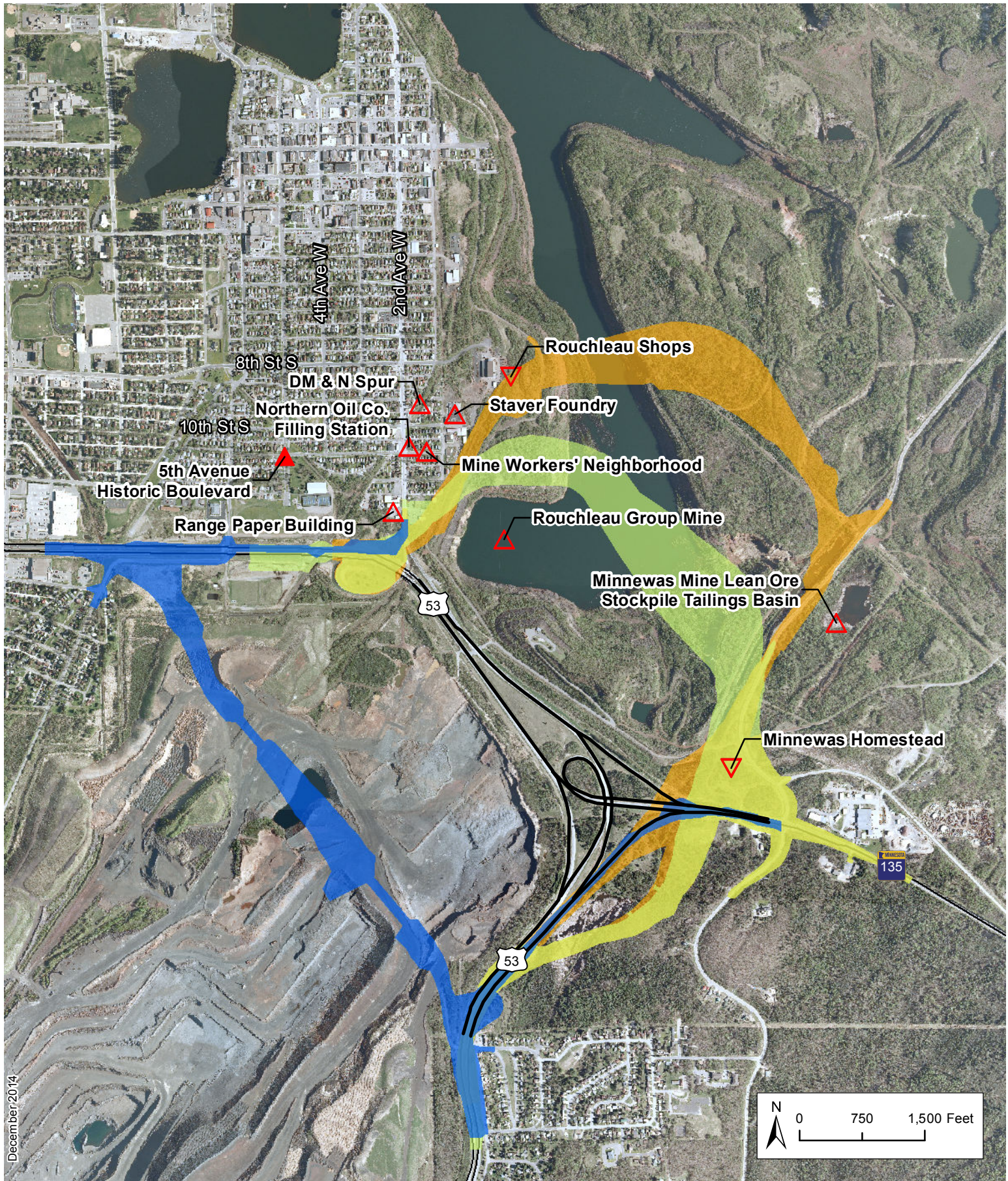
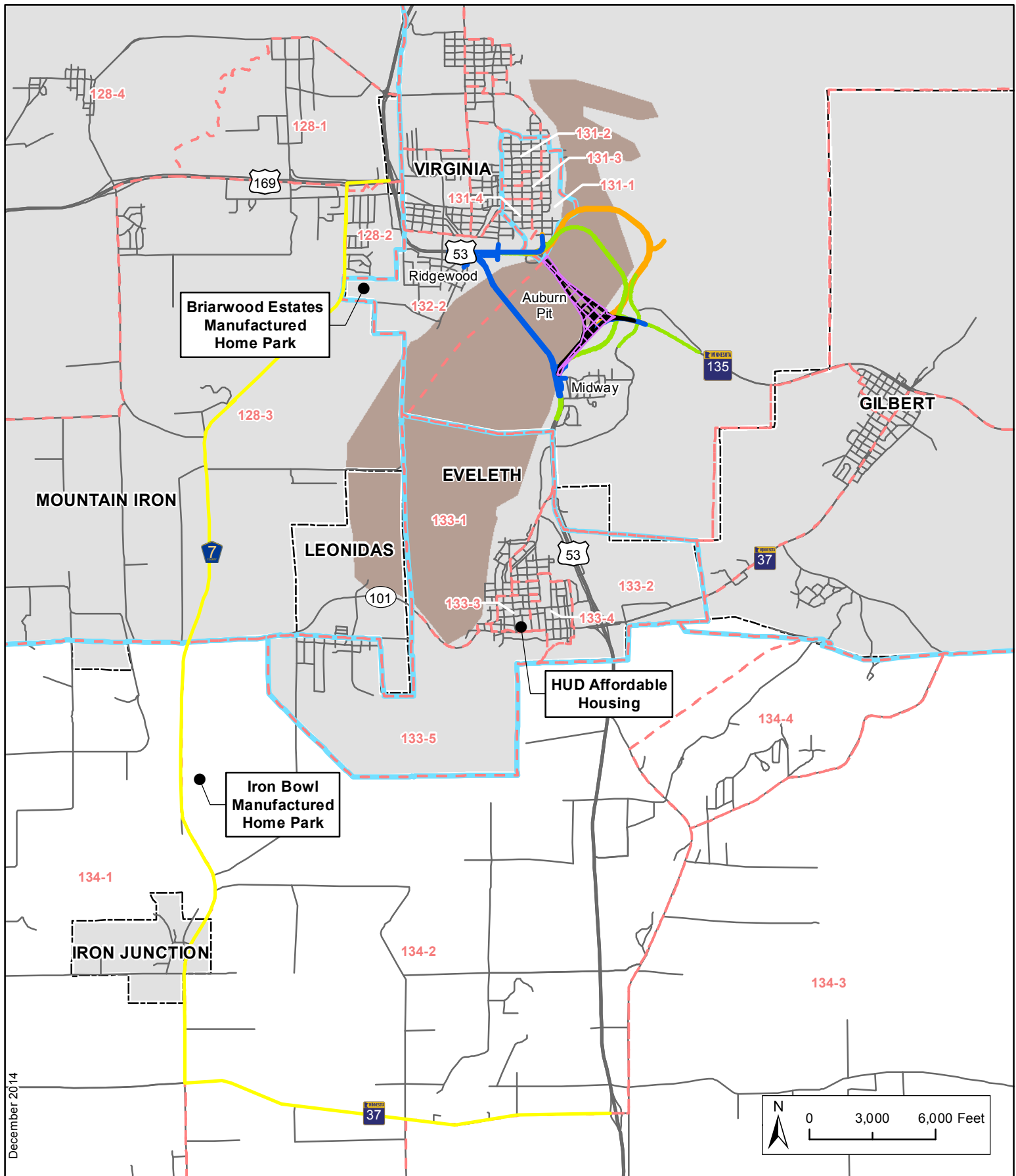


Figure 4.4-1
Cultural Resources
 US Highway 53 Virginia to Eveleth
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Source: 2010 US Census, 2008-2012 American Community Survey 5-Year Estimate

Legend

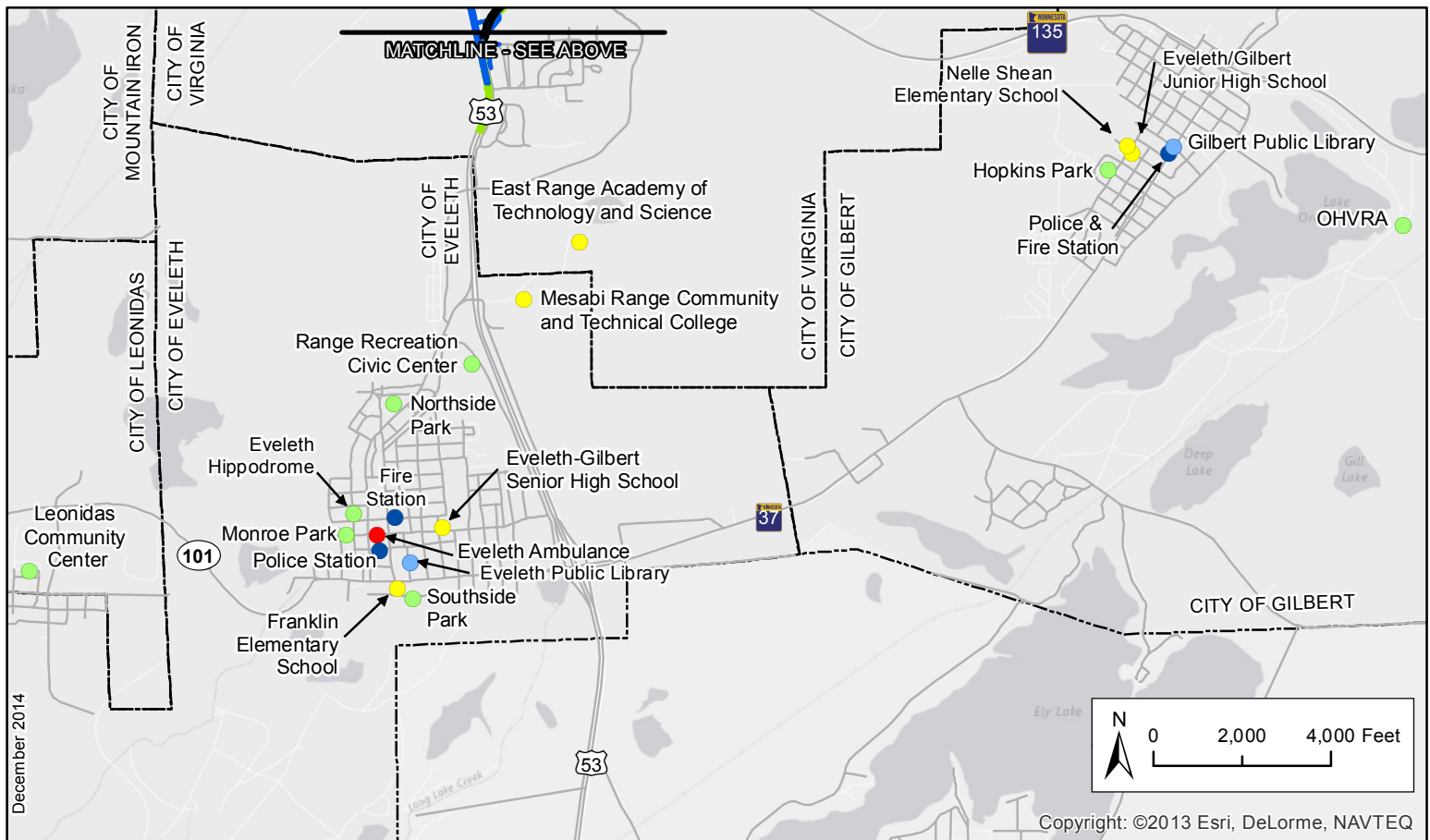
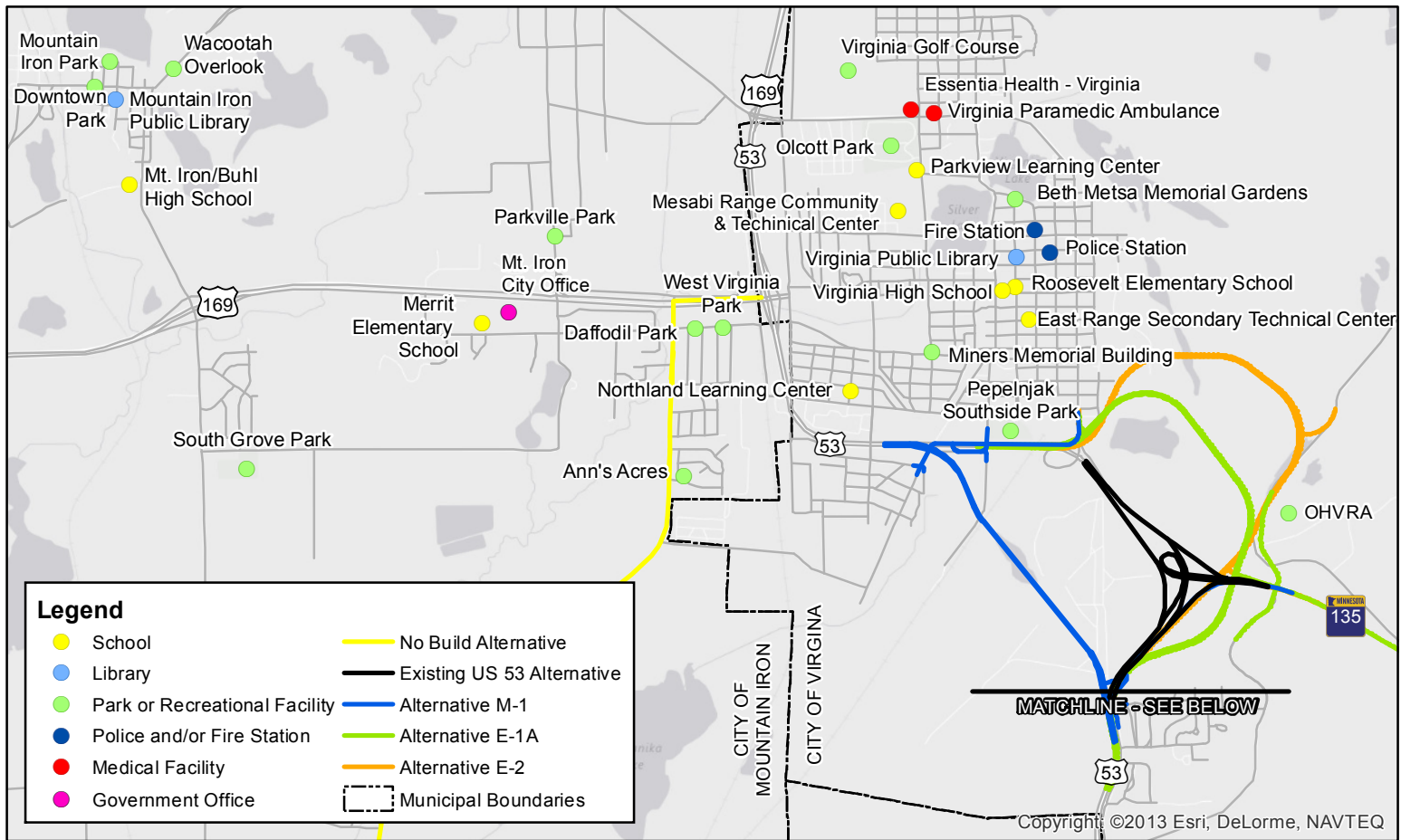
- St. Louis County Block Groups
- St. Louis County Census Tracts
- Existing US 53 Easement Agreement Area
- No Build Alternative
- Existing US 53 Alternative

- Alternative E-1A
- Alternative M-1
- Alternative E-2
- Previously Mined Area
- Municipalities

- Low-Income Population



Figure 4.6-1
Low-Income Populations
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Figure 4.7-1
Community Facilities
 US Highway 53 Virginia to Eveleth
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